Report on the documentation of the preserved parts of the Johann Lorentz organ in the Heliga Trefaldighets kyrka in Kristianstad

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Report on the documentation of the preserved parts of the Johann Lorentz organ in the Heliga Trefaldighets kyrka in Kristianstad

1. Preserved parts of the Lorentz-organ

Following parts of the Lorentz-organ have been preserved:

– all frontpipes from Hauptwerk and Rückpositiv;

– the front part of the upper case of the Hauptwerk and some fragments of the side walls;

– almost the complete case of the Rückpositiv; some parts of the back are missing;

– some traces in the church walls at both sides of the Hauptwerk case still indicate the original construction of the main (Hauptwerk) case.

2. The frontpipes

2.1. General description

The frontpipes are made of metal with a high tin content, casted on sand (fig. 12). The sheets for the longest pipes are soldered together from two parts. The walls are relative thin and thinned out from the bottom to the top, as was usual in 17th century. The languids are rather thin too, with a bevel of about 70°. The dummy pipes in the towers and the lower flats in both HW and RP (i.e. those standing among the sounding ones) have languids too, whereas the small dummies in the upper flats do not. The solder seams are thin and irregular (fig. 2). The sheet width and the mouth width are marked by a circle. All lips have the ogee shape. At the top of the ogee shape the pipes of the RP have three additional points in the form of a triangle with two 45° angles (fig. 3-5).
In 1961 eleven of the larger pipes in the Hauptwerk and one in the Rückpositiv have been fitted with new backs in considerably thicker metal (fig. 1). Since there are no traces of repaired damage due to stability problems, there was no technical need to do so. It is striking that only sounding pipes have been treated this way. Apparently the historical pipes were sacrificed to the wish to voice these very narrow scaled pipes considerably louder than intended by Lorentz. From 34 pipes the languid seam dates from 1961. In this case too, this was apparently not only done for necessary repairs. At no other moment in their history the pipes were treated so disrespectfully and changed so much as in 1961. Nevertheless almost all languids are still original.
Apart from the changes the technical condition of most pipes is rather good. Some pipes have one or more dents and some toe tips are collapsing or have already been renewed (fig. 6-8).

2.2. Voicing

Many languids have small counterfaces that could be partially original (fig. 9). However, it is not clear if they originate from the voicer or from the pipemaker. Even in some original dummies small counterfaces are to be found. The nicking found in about 1/3 of the sounding pipes (fig. 10) does not seem to be original. All nicking must originate from before 1889. Not all pipes with nicks are in use now (e.g. HW-SF5) and the the different types of nicks all differ from Frobenius' nicks in the new pipes. Only a few pipes have really heavy nicks. In almost all cases it should be possible to reduce the effect of the nicks to a high degree.
Now most languid positions are too low. Some pipes with a correct languid position have still a remarkably good sound.

Many pipes show traces of lower cutups than the actual ones (fig. 3 and 10c). However, it is not at all evident that these traces are indicating changes by a later organbuilder. In many cases they rather indicate the cutups made by the pipemaker, which had still to be raised by the voicer. Most of the dummy pipes still have a cutup too low for a sounding pipe. There is no indication that the cutups have been changed systematically by a later organbuilder. It must be very well possible to restore approximately the original voicing.

2.3. Pitch

All sounding pipes have originally be tuned by cutting them out at the back. Now there are additional tuning slots, dating from 1961 (fig. 11). In some cases the cutouts themselves have also been enlarged. The traces of the original cutouts indicate a pitch about one halftone higher than modern pitch.
The dummy pipes too have cutouts, probably to obtain metal for repairing other pipes. The pitches of these pipes differ in an unsystematic way from what could be expected on the basis of the original inscriptions. In combination with the very low cutups it is to be excluded that the dummies were prepared to sound at a given pitch.

2.4. Inscriptions

2.4.1. Lorentz (1631)

At the left of the vertical solder seam almost all pipes have pipemaker inscriptions[1] on body and foot and probably also on the lower side of the languid.[2] The inscriptions indicate the keys the pipes belonged to, following the German conventions still in use today. On the dummy pipes with languid, which have a realistic scale, the inscriptions correspond to the scale of the corresponding sounding pipe. To indicate a dummy, Lorentz added a '0' (or an 'o'?) to the inscription. There are two slightly different handwritings to be distinguished. Apparently Lorentz had two pipemakers. One made most of the pipe bodies, the other most of the feet. Incidentally a third writer can be distinguished (see Table 1b). On the pipes with new backs, some of the inscriptions on the body (partially) disappeared.
According to the original inscriptions both Principals (HW 16' and RP 8') were from F to f^2 placed in the front.

Apart from these tone inscriptions there are original numbers on the frontpipes approximately at the height of the hook, at the back, sometimes at the left and sometimes at the right of the solder seam. In one case a number is written over the solder seam, so the numbers were not written on the plane sheet, but on the ready soldered pipe. Here too, on the pipes with new backs the numbers have disappeared.
The numbering system is the following:
– Each series is numbered from north to south.
– In the RP each series is corresponding to a single tower or flat.
– In the HW each side tower constitutes together with the adjacent flat one series.
– The numbers of the pipes at the south side are marked with a stroke above them.

In the present state the pipes in the northern flat seem to be numbered from south to north. That this originally was not the case is proven by the fact that the pipes in the tower bear the lower numbers (originally 1-9), and those in the flat the higher ones (10-20). Not the system, but the positions of the pipes within the flat are (now) mirrored.

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1 The pipemaker is the only one who has the need to write an inscription on more than one part of the pipe.

2 This should during a restoration be checked with a boroscope. With simple equipment we have found the inscription 'H' on the languid of pipe NT5 of the HW (Lorentz' original H, Frobenius cs^0).

2.4.2. The time between 1631 and 1961

From the time between 1631 and 1961 there are hardly any inscriptions te be found on the pipes. On the pipe ST1 of the HW the word 'duglig' is written in a probably 19th century handwriting. Since this pipe must always have been a dummy, it is unclear what was exactly meant with that. Did the writer plan to make it sounding?

2.4.3. Frobenius (1961)

From Frobenius there are two main series of inscriptions on the pipes.

At the back of the pipes, normally directly above the languid seam, at the right side of the vertical solder seam (or at the same place on a new back) the key is indicated in black ink (written with a fine brush?), on the HW pipes with the addition " 16' ".

On the back too, at some distance above the tone inscription there is a numbering according to the following system:

"R" (only on the RP pipes)
{Roman numeral}
{Arabic numeral}

The Roman numeral indicates the number of the segment (tower or flat), numbered from north to south from I to V.
The Arabic numeral indicates pipe number within the segment, also numbered from north to south.[3]

These numbers do not always correspond to the actual place of the pipes, indicating that they were already written on the pipes during the dismantling of the organ before the 1961 rebuilt. In most cases where new backs were made, apparently the numbers were copied on the feet (before they disappeared with the cut out metal) and afterwards copied a second time on the new backs.

2.4.4. The original arrangment of the pipes

The difference between the 1631 and the 1961 numbering indicates that already before 1961 many pipes must have been exchanged, sometimes within the same tower or flat and sometimes even between both flats or side towers. This was not possible until 1889. From that year onwards the frontpipes were no longer sounding.
Frobenius made them sounding again and used them systematically for keys that were one whole tone higher than in the original situation. Since Frobenius' pitch was about a semitone lower than Lorentz' pitch, the pipes were tuned a semitone up by the means of new tuning slots (fig. 11). To use the correct pipe for the correct note, Frobenius had to put the sounding pipes back into the right tower or flat. However, he apparently overlooked or ignored[4] the original numbers and arranged the pipes according

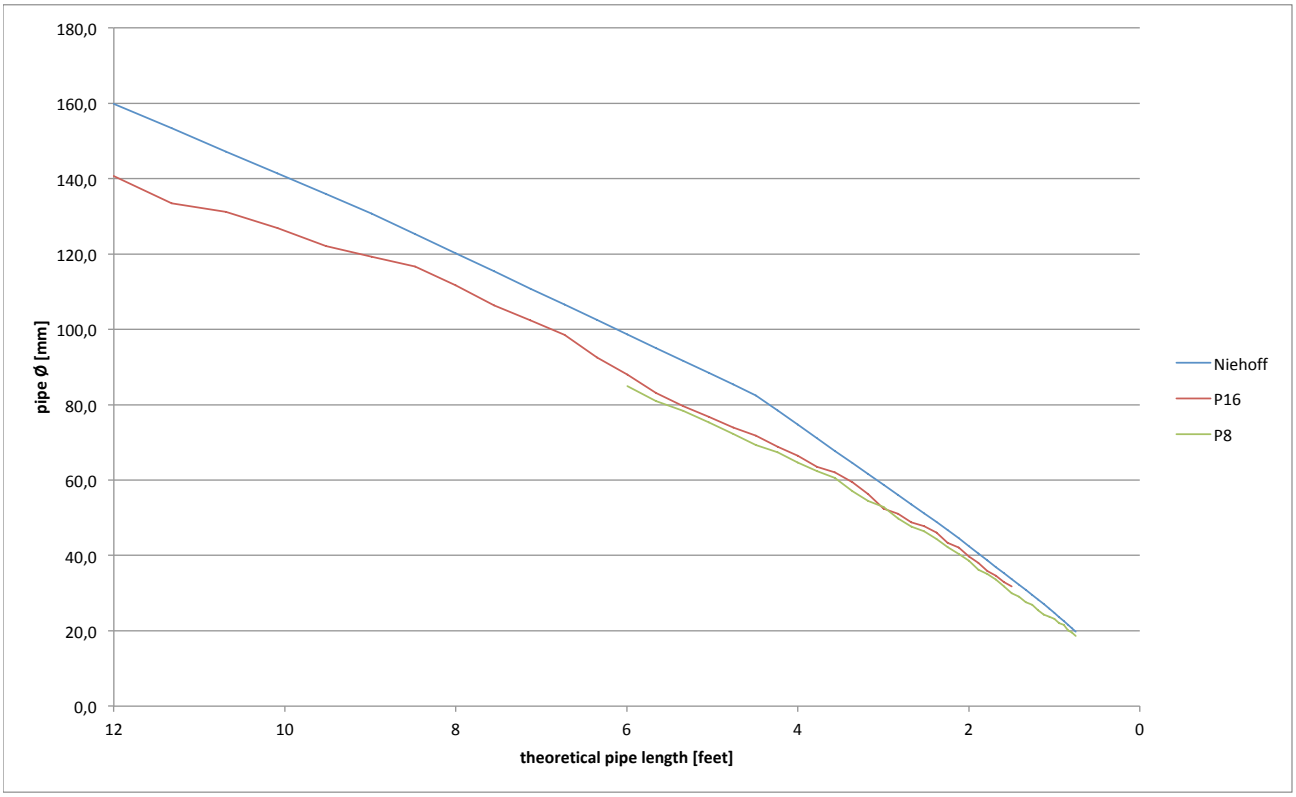
3 Due to the fact that almost the complete flats in the main case were exchanged before 1961 at first sight the order seems to be the opposite.

4 Probably he was not aware of the numbers. We too overlooked them at the beginning of the investigations. In many cases one really has to search for them, even if one knows that they should be there somewhere on the pipe. In addition, in the 1960s most organbuilders and consultants were not interested in a possible original situation, only in a smooth progression of the scales. In view of the irrespectful treatment of the pipes, they were only considered as (problematic?) material to be integrated into the new organ.

to his own system.[5] as a result, the sounding pipes in the northern flat and the southern side tower are still mirrored compared to the original situation. Most dummies remained at their 1889 places.

2.5. Scalings

As already mentioned the original scales of the pipes were extremely narrow (the narrowest scales known to me from a large Northern European Renaissance instrument). The lowest F pipes of HW and RP (with pitches F_1 and F, respectively) have approximately the same scales as frontpipes with the pitches C and c^0 in a Schnitger-organ. And as shown in the diagram below, the scales are even narrower than the already very narrow principal scales of the Dutch Van Covelens school.[6] The tonal character must have been very elegant (in our time even unique for a Renaissance instrument with metal pipes).



Curiously enough, the pipes of the Rückpositiv have slightly smaller scales than those of the Hauptwerk. The difference is too much and too systematic to be a coincidence. However, it is definitely too small to have any sounding effect (ca. 1 quarter-tone).
Due to the very narrow scaling the reconstruction of the higher principal stops (including the mixtures) is rather unproblematic. On the one side in no Northern Renaissance organ known to me, the smaller principal stops are wider scaled than the lower ones. On the other hand a scale even narrower than that of the frontpipes is hardly imaginable for principal stops. Therefore one can be rather sure that all principal stops had the same scale, which is also the case in the mentioned instruments from the Van Covelens-school.

5 side towers: smallest sounding pipe at the inner side; flats: all notes at the same side as the corresponding notes in the adjacent side tower.

6 known from organs as Leiden, St. Pieter (Jan van Covelens, 1518) and Lüneburg, St. Johannis (Hendrik Niehoff, 1551-53). In both organs the scales now are wider because of shortening of the old pipes by Van Hagerbeer and Stellwagen, respectively.

3. The case

From the main case only the front side and some fragments of the sides have been preserved. All other parts have been renewed. The lower part of the main case too has been completely replaced in 1961 in a style that does not harmonize at all with the richly decorated upper case. On the basis of the traces in the upper case it is possible to reconstruct at least the positions of the imposts of the ancient lower case and therefore the total width (≈ the actual one) as well as the width of the original keydesk. Apart from some elements of the back, the RP case has completely been preserved. Traces of hinges and holes for the ropes show that this case originally was fitted with shutters (or that they at least were planned initially). Traces of double imposts at the sides of the back confirm that the stop levers of the RP were originally placed there (fig. 15-16).[7]
One of the points of departure for the design of the cases was apparently that the upper part of the main case was 16' wide and the RP case 8'. The deviations of the exact dimensions makes the impression that the dimensions of both cases were slightly adapted to the dimensions of the inner parts,[8] a phenomenon not uncommon in ancient organbuilding.
Remarkable is finally the wide spacing of the frontpipes, especially in the main case. To reduce the space between the pipes in the flats, Frobenius placed black painted strips of wood at the inside of the imposts and put the pipes narrower together on new toeboards (fig. 14).
Unlike most of the pipes, the technical condition of the case is problematic. Due to stability problems in the past at many places there is considerable subsidence, especially of the tower caps (fig. 17). As a consequence the pipe shades of the towers are deformed and probably under tension (fig. 18). Further damage is not to be excluded.

4. Conclusions to be drawn about the original instrument

It is remarkable that, unlike most of his contemporaries, Lorentz placed relatively many (large and expensive!) dummy pipes in the towers of the HW. The reason can only partially (if at all, his contemporaries seldom bothered about that) have been to avoid placing sounding pipes near the imposts. In the central tower the reason could have been to have enough interspace between the tone channels for the notes C D E - A and therefore also sufficient space for the large pipes for that note. As a consequence of the wide spacing of the frontpipes and the large number of dummies the HW case was very wide, which made long windchests possible. The pipes of each stop could stand in one row,[9] reducing the required depth to a minimum. In that way he could place as many stops as possible in front of the arch behind the organ case, thus avoiding problems with a too limited height.
The wide spacing of the frontpipes also had the advantage of a good sound-radiation of the interior pipes.

7 This was already known from a historical description of the instrument.

8 The deviation of the exact proportion is too large to be simply attributed to manufacturing tolerances but too small to be based on a different principle.

9 common in gothic and earlier Renaissance-instruments with a flat front

Organs which could serve as a model for other stops than principals

The inscriptions on the pipes in Kristianstad and the technical characteristics of these pipes make it possible to identify pipes in other organs as the work of Lorentz.
The organs with known or supposed pipes from Lorentz, his master Nicolaus Maas or his pupil Gregor Mülisch are the following:

Flensburg, St. Nikolai
Schwabstedt (only frontpipes)
Helsingør, St. Mary (only frontpipes)
Torrlösa (originally Helsingborg, St. Mary)
Roskilde, Cathedral (rebuilt finished by Mülisch)

The organ in Flensburg was built in 1604-1609 by Nicolaus Maas. Johan Lorentz worked on this instrument as an apprentice of Maas. Apart from a number of Schnitger stops also a number of older pipes have been preserved. They should be examined more in detail to determine their relevance.

From the organs of Schwabstedt and Helsingør not much new information can be expected. Like the organ in Kristianstad they only contain old frontpipes.

The organ of Torrlösa is potentially a very interesting instrument. With the characteristics and inscriptions known now from Kristianstad, this organ should be carefully examined.

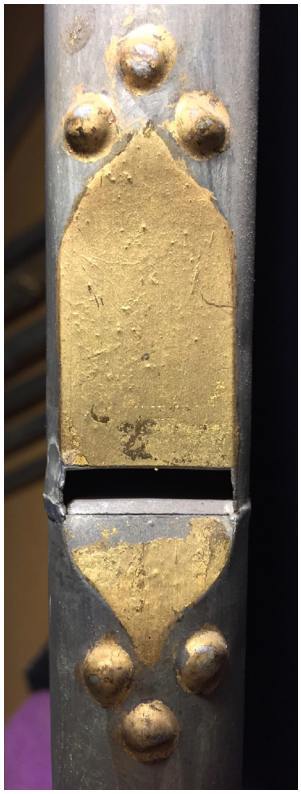
In the organ in Roskilde a number of stops are attributed to Lorentz or his pupil Mülisch. Unfortunately the inscriptions on the potentially relevant pipes do not correspond to those found in Kristianstad. This does not exclude that they were made by Mülisch, but their relevance for the reconstruction of a Lorentz-organ can only be determined by comparing their scales with those of stops certainly made by Lorentz in another organ. At the present state of the investigations Torrlösa is the only instrument with which this could be possible.

For a next step in the investigations examination of the material in Torrlösa and Flensburg should have the highest priority.

Pictures

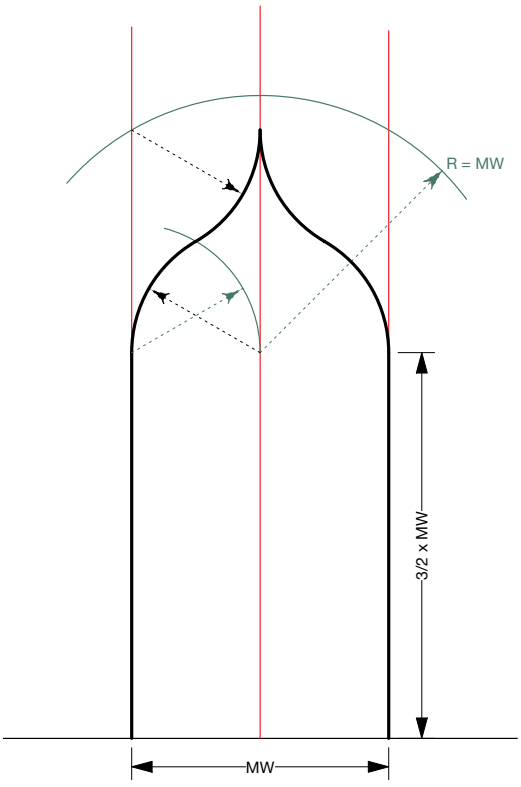
1. pipes with new backs (1961)

2. solder seams Lorentz



3. lip shape pipes RP

4. lip shape pipes HW

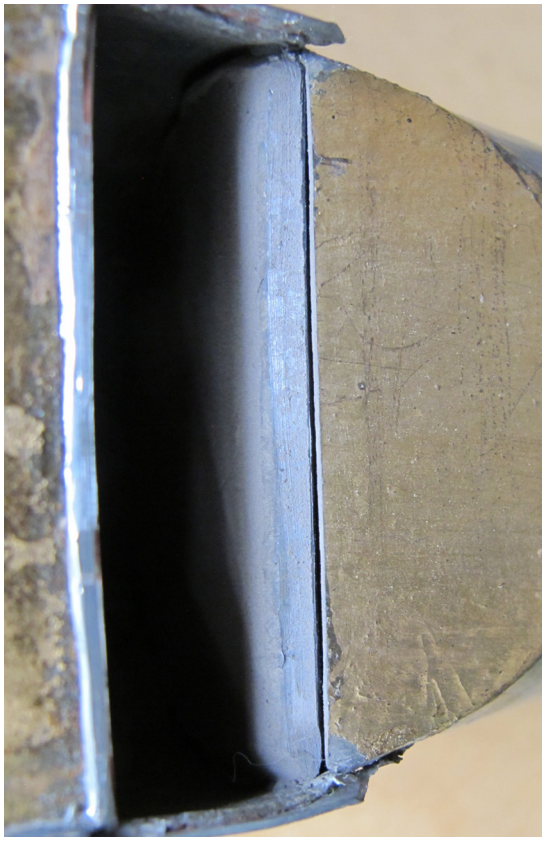


5. idem, underlying construction

6. dented pipe

7. collapsing toe tip

8. renewed toe tip



9. languid with small counterface

a

b

c

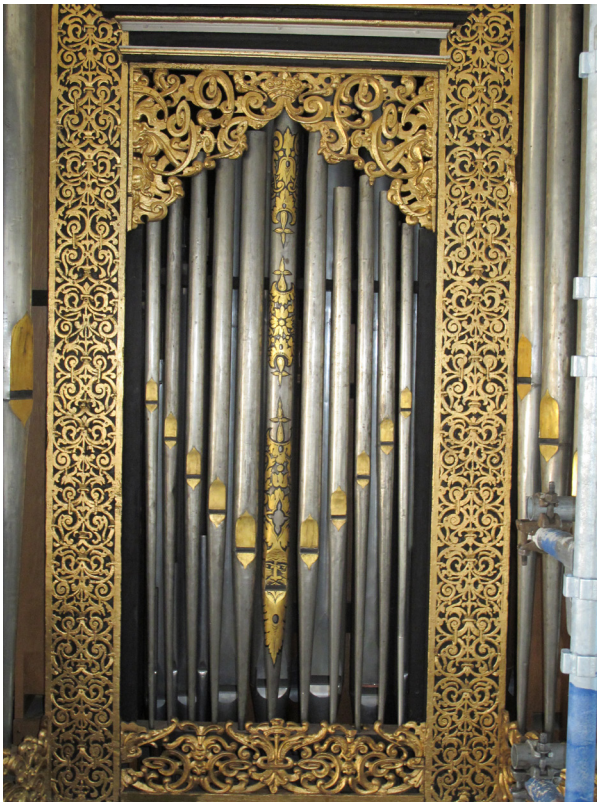
d

10. a-c: different kinds of nicking; d: untreated languid

11. original cutouts and new tuning slots

12a-b: traces of sand-casting

13. Back RP with new doors from 1961



14. HW flat with inserted black painted wood strips

15. Traces of double imposts in the back of the RP case (north side)

16. Traces of double imposts in the back of the RP case for the stop action.

17. subsidence of the northern tower cap of the HW

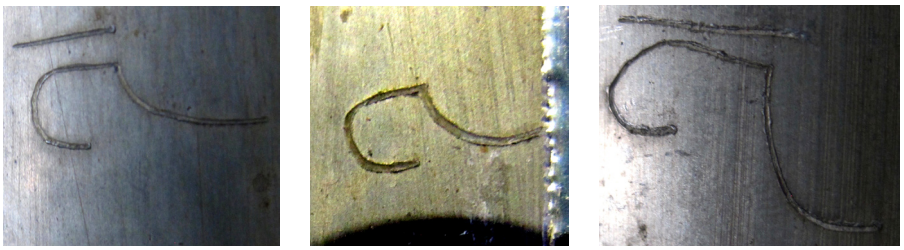
18. deformed pipe shades due to subsidence of the tower cap

Inscriptions

1. Key inscriptions Johann Lorentz (handwriting 1 / not distinguishable[1])

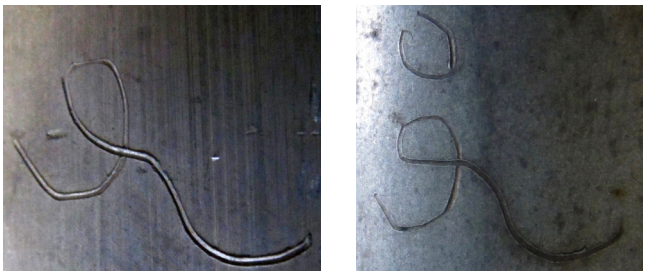
c

cs



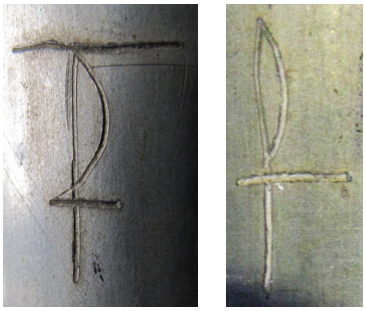
d

ds



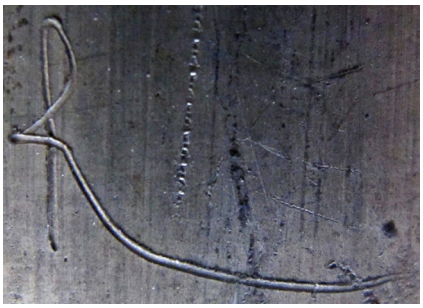
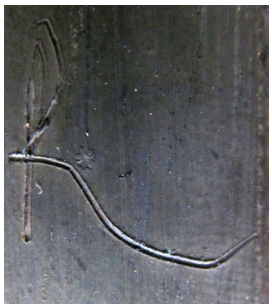
e

f



1 The difference between both handwritings cannot be distinguished for all letters.

fs

g


gs


a



b

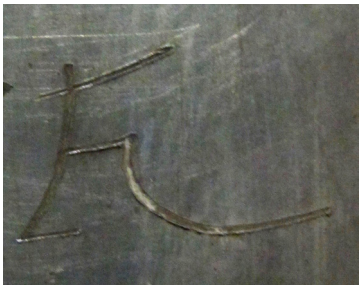


h



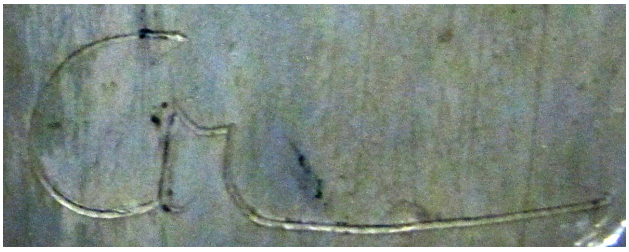
F


Fs




G


Gs



A

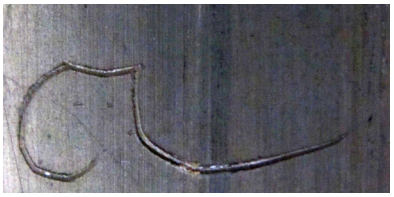
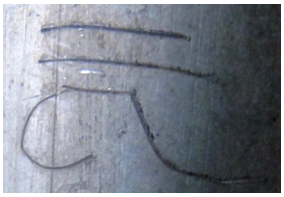

B

H

1a. Key inscriptions Johann Lorentz (handwriting 2)

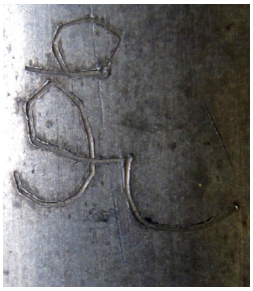
c

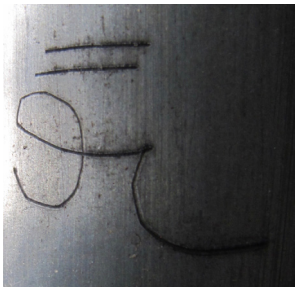

cs

d


ds



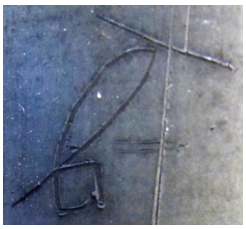


e


fs

gs

b



h

B

H

Lorentz 3

(handwriting 3?)

b

2. Numbers Johann Lorentz)

1





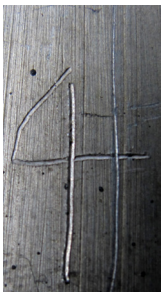
2




3




4

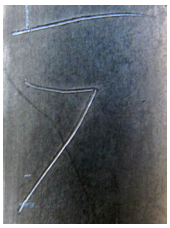




5


6



7



8


9


20


Tables

Kristianstad – Frontpipes HW (1a)

Nr		Pitch c(0)	Key L	Key F	Cir-cumf.	MW	Cut up	CU trace	Languid Th	Languid Bev.	Languid nicks	Sheet width	Ø	SW MW	MW CU
ST	1	cs^{0}	$*b^{0}$	—	228,0	56,3	10,5		3,7	70°		225,6	72,6	4,00	5,4
ST	2	B	gs^{0}	b^{0}	243,0	61,8	16,2	11,3	3,3			241,3	77,3	3,90	3,8
ST	3	Fs	e^{0}	fs^{0}	(293)	72,3	22,0	18,5	3,1			290,6	93,3	4,02	3,3
ST	4	D	c^{0}	d^{0}	(353)	86,4	28,1	25,1	4,9		0+9	350,8	112,4	4,06	3,1
ST	5	C	B	c^{0}	(378)	93,7	28,4	24,4	4,6			374,8	120,3	4,00	3,3
ST	6	E	d^{0}	e^{0}	(324)	80,1	24,2	20,4	4,2			321,7	103,1	4,01	3,3
ST	7	Gs	fs^{0}	gs^{0}	263,0	64,2	18,7	14,4	3,6		0+8	261,3	83,7	4,07	3,4
ST	8	c^{0}	b^{0}	c^{1}	231,5	54,3	15,5	12,9	2,7		0+11	229,2	73,7	4,22	3,5
ST	9	H-	$*h^{0}$	—	219,0	54,2	15,5	14,0	3,4			216,8	69,7	4,00	3,5
SF	1	f^{1}	e^{2}	—	105,7	25,7	8,3	5,1	1,6		0+7	103,5	33,7	4,02	3,1
SF	2	fs^{1}	$*ds^{2}$	fs^{2}	110,8	27,4	8,2	5,5	2,1			108,5	35,3	3,96	3,3
SF	3	d^{1}	c^{2}	d^{2}	126,6	31,5	9,9	7,2	1,5			124,6	40,3	3,96	3,2
SF	4	b^{0}	gs^{1}	b^{1}	152,1	37,6	11,9	10,1	2,2			150,0	48,4	3,99	3,2
SF	5	fs^{0}	e^{1}	fs^{1}	179,5	43,6	12,7	9,6	2,9	70°		176,8	57,1	4,05	3,4
SF	6	d^{0}	c^{1}	d^{1}	211,2	54,0	15,4	11,5	3,6			208,8	67,2	3,86	3,5
SF	7	e^{0}	d^{1}	e^{1}	197,9	47,6	13,6	11,6	2,7		6+3	195,1	63,0	4,10	3,5
SF	8	gs^{0}	fs^{1}	gs^{1}	162,6	40,6	12,2	9,9	2,3		4+0	160,3	51,8	3,95	3,3
SF	9	c^{1}	b^{1}	c^{2}	138,7	34,2	9,9	8,4	2,3		0+4L	136,2	44,1	3,99	3,4
SF	10	e^{1}	$*cs^{2}$	e^{2}	121,6	29,7	8,7		1,8			119,6	38,7	4,02	3,4
SF	11	—	d^{2}	—	114,7	27,4	6,5					112,5	36,5	4,11	4,2
CT	1	—	?	—	370,0	87,3	15,5	11,7	4,7			367,2	117,8	4,21	5,6
CT	2	—	?	—	374,0	90,0	15,4		4,1		11+0	371,4	119,0	4,13	5,9
CT	3	B_1	Gs	B	402,0	100,6	26,5	23,1	4,4		15+0	398,6	128,0	3,96	3,8
CT	4	Gs_1	Fs	Gs	(422)	105,1	32,7	24,5	4,9			419,3	134,3	3,99	3,2
CT	5	G_1	F	G	445	108,7	35,0	24,5	5,6	70°		442,1	141,6	4,07	3,1
CT	6	A_1	G	A	(415)	101,4	32,4	25,6	5,3			412,0	132,1	4,06	3,1
CT	7	$[A_1]$	A	—	388	94,6	26,8	11,8	4,5			385,3	123,5	4,07	3,5
CT	8	H_1	*A	H	(385)	94,4	29,5	20,2	4,3			382,0	122,5	4,05	3,2
CT	9	[E/F]	?	—	370	84,4	19,2	15,3	4,0			367,1	117,8	4,35	4,4
NF	1	e/f^{1}	ds^{2}	—	110,9	27,2	8,9	7,5	2,2			109,1	35,3	4,01	3,0
NF	2	f^{1}	$*d^{2}$	f^{2}	114,5	28,1	8,8	7,1	1,0			112,7	36,4	4,01	3,2
NF	3	cs^{1}	h^{1}	cs^{2}	134,4	32,8	10,6	8,1	2,3			132,2	42,8	4,03	3,1
NF	4	a^{0}	g^{1}	a^{1}	155,4	38,1	11,5	9,9	2,3			153,2	49,5	4,02	3,3
NF	5	f^{0}	ds^{1}	f^{1}	188,9	46,2	13,6	10,5	2,9			186,9	60,1	4,04	3,4
NF	6	ds^{0}	cs^{1}	ds^{1}	202,0	50,9	14,6	9,8	3,3			199,6	64,3	3,92	3,5
NF	7	g^{0}	f^{1}	g^{1}	166,8	42,7	12,6	11,2	2,3			164,7	53,1	3,86	3,4
NF	8	h^{0}	a^{1}	h^{1}	147,0	36,6	10,5	8,9	2,8			144,7	46,8	3,95	3,5
NF	9	ds^{1}	cs^{2}	ds^{2}	121,3	29,5	9,6	7,6	2,2			119,6	38,6	4,05	3,1
NF	10	cs/d^{1}	$*c^{2}$	—	126,7	30,3	9,4	7,1	2,0			124,9	40,3	4,12	3,2
NF	11	g^{1}	f^{2}	g^{2}	101,5	25,4	8,2	6,3	1,7			99,8	32,3	3,93	3,1

Kristianstad – Frontpipes HW (2a)

Nr		Pitch c(0)	Key		Cir-cumf.	MW	Cut up	CU trace	Languid			Sheet width	Ø	SW / MW	MW / CU
			L	F					Th	Bev.	nicks				
NT	1	c^0	[h^0?]	—	218,0	53,8	16,3	11,9	3,0			215,8	69,4	4,01	3,3
NT	2	cs^0	*b^0?	cs^1	227,0	55,3	14,6	12,7	3,7			224,3	72,3	4,05	3,8
NT	3	A	g^0	a^0	253,0	62,4	18,6	15,9	2,9	70°		250,0	80,5	4,01	3,3
NT	4	F	ds^0	f^0	312,0	77,9	22,6	17,2	3,9	70°		309,4	99,3	3,97	3,5
NT	5	Cs	H	cs^0	(370)	90,4	27,1	21,2	3,5			366,6	117,8	4,06	3,3
NT	6	Ds	cs^0	ds^0	(337)	84,3	25,2	22,2	3,7			334,0	107,3	3,96	3,3
NT	7	G	f^0	g^0	279,0	69,6	20,9	17,1	3,5		*	276,5	88,8	3,97	3,3
NT	8	H	a^0	h^0	235,0	57,5	17,9	13,0	3,1			232,3	74,8	4,04	3,2
NT	9	A/B	*b^0	—	226,0	56,5	15,3	11,0	3,0			223,1	71,9	3,95	3,7
SFu	1					20,1						88,3	28,1	4,39	
SFu	2					22,0						94,5	30,1	4,29	
SFu	3					23,2						97,0	30,9	4,19	
SFu	4					25,4						100,7	32,1	3,97	
SFu	5					23,9						93,6	29,8	3,92	
SFu	6					22,9						90,3	28,8	3,95	
SFu	7					21,5						88,3	28,1	4,11	
SFu	8					20,2						87,4	27,8	4,33	
SFu	9					21,8						91,4	29,1	4,20	
SFu	10					23,4						95,9	30,5	4,10	
SFu	11					24,8						102,1	32,5	4,12	
SFu	12					22,6						92,7	29,5	4,10	
SFu	13					21,1						89,2	28,4	4,22	
SFu	14					21,0						86,0	27,4	4,09	
NFu	1					21,0						87,7	27,9	4,18	
NFu	2					21,2						95,0	30,2	4,47	
NFu	3					22,8						94,9	30,2	4,16	
NFu	4					25,0						108,4	34,5	4,33	
NFu	5					23,0						100,0	31,8	4,35	
NFu	6					22,0						94,1	30,0	4,27	
NFu	7					21,0						86,9	27,7	4,14	
NFu	8					21,3						87,7	27,9	4,12	
NFu	9					20,4						93,9	29,9	4,60	
NFu	10					23,0						97,9	31,2	4,26	
NFu	11					25,8						103,3	32,9	4,01	
NFu	12					21,5						94,6	30,1	4,41	
NFu	13					21,5						92,5	29,4	4,31	
NFu	14					20,5						90,0	28,7	4,39	

Kristianstad – Frontpipes HW (1b)

Nr		Body length					Foot			Wall th			M shape		
		Tot. L	Orig.L	sound.L	SL old		L	L or.	Ø tip	u	l	foot	UL	LL	ULH
ST	1	1537		1090	1090		853		16,5	0,40	0,80		O	O	
ST	2	1715		1305	1390		723		17,8	0,30	0,55		O	O	
ST	3	1894		1652	1725		599		20,4	0,50	0,70		O	O	
ST	4	2236		2090	—		455	434	21,8	0,50	0,60		O	O	
ST	5	2520	2415	2350	—		325	303	25,8		1,10		O	O	
ST	6	2132		1837	1917		472		19,1	0,40	0,75	0,75	O	O	
ST	7	1825	1740	1452	1567		601		18,3	0,30	0,55		O	O	
ST	8	1750	(1570)	1155	1220		720		16,8	0,35	0,80		O	O	
ST	9	1542		1265	1265		854		16,2	0,35	0,75	0,80	O	O	
SF	1	445		423	423		784		12,4	0,45	0,65		O	O	
SF	2	559		376*	495		700	525	13,5	0,35	0,80		O	O	
SF	3	735	(685)	495**	—		610		14,7	0,40	0,60		O	O	
SF	4	862	(805)	632	680		528		14,6	0,40	0,65		O	O	
SF	5	989		802	840?		441		15,8	0,45	0,90		O	O	
SF	6	1127		1020	1080		353		16,1	0,40	0,80		O	O	
SF	7	995		913	960		440		14,5	0,40	1,00		O	O	
SF	8	861		715	765?		530		14,3	0,40	0,75		O	O	
SF	9	737		563	594		601	482	14,1	0,45	0,80		O	O	
SF	10	644		443	463		698		14,1	0,35	0,65		O	O	
SF	11	487		—	476		783		12,6	0,40	0,70	0,65	O	O	
CT	1	2188	2188	1655s			818	794	24,2	0,43	0,96		O	O	
CT	2	2572	2572	2398			715	709	23,8	0,43	0,86		O	O	
CT	3	2883	2883	2652	2813		602	583	25,9	0,43	1,26		O	O	
CT	4	3260	3260	2969	3164		502	473	27,3	0,39	0,96		O	O	
CT	5	3405	3343	3185	3315?		377	340	30,5	0,55	0,90		O	O	
CT	6	3235	1905				494	475	27,8		1,05		O	O	235
CT	7	2920	2920	2628	2628		>598		24,5	0,50	0,85		O	O	210
CT	8	2715	2435	2490	{ }		723	474	25,8		1,05	1,10	O	O	214
CT	9	2300			1740		826	812	23,3	0,45	1,00	0,85	O	O	196
NF	1	478		443	443		785		12,7	0,35	0,55		O	O	
NF	2	590		410*	515		699		13,0	0,30	0,60		O	O	
NF	3	767		540	?		611		13,9	0,45	0,65		O	O	
NF	4	849		675	723		525		14,0	0,35	0,75		O	O	
NF	5	995		854	905		439		15,5	0,30	0,70		O	O	
NF	6	1137		967	1005		353		15,5	0,40	0,80		O	O	
NF	7	1007	(984)	764	810		438		15,4	0,30	0,75		O	O	
NF	8	784		584**	?		523		14,5	0,45	0,70		O	O	
NF	9	717	(658)	467*	?		621	604	12,7	0,35	0,50		O	O	
NF	10	600		527	527		700		13,9	0,30	0,60		O	O	
NF	11	444		373	380		780	540	13,2	0,35	0,50		O	O	

Kristianstad – Frontpipes HW (2b)

Nr		Body length					Foot			Wall th			M shape		
		Tot. L	Orig.L	sound.L	SL old		L	L or.	Ø tip	u	l	foot	UL	LL	ULH
NT	1	1480	1480	1153	1153	1128	850	850	16,5	0,35	0,75		O	O	
NT	2	1720	1720	1082	1195		730	600	16,4	0,36	1,00		O	O	
NT	3	1905	1905	1382			598	598	18,6	0,63	0,85		O	O	
NT	4	2052	2052	1753	1828		468	458	19,6	0,41	0,90		O	O	
NT	5	2386	2386	2221			324	300	25,6	0,63	1,05		O	O	
NT	6	2177	2177	1564			464	464	20,8	0,56	0,95		O	O	
NT	7	2095	1619	1564			593	593	19,1	0,40	0,85		O	O	
NT	8	1750	1750	1227	1275	1317	723	723	17,0	0,50	0,85		O	O	
NT	9	1560	1560	1360	1360		847	847	16,3	0,45	1,00		O	O	
SFu	1	255					213						O	O	
SFu	2												O	O	
SFu	3												O	O	
SFu	4	365					143						O	O	
SFu	5												O	O	
SFu	6												O	O	
SFu	7												O	O	
SFu	8												O	O	
SFu	9												O	O	
SFu	10												O	O	
SFu	11												O	O	
SFu	12												O	O	
SFu	13												O	O	
SFu	14												O	O	
NFu	1	250					222						O	O	
NFu	2												O	O	
NFu	3												O	O	
NFu	4	365					142						O	O	
NFu	5												O	O	
NFu	6												O	O	
NFu	7												O	O	
NFu	8												O	O	
NFu	9												O	O	
NFu	10												O	O	
NFu	11												O	O	
NFu	12												O	O	
NFu	13												O	O	
NFu	14												O	O	

Kristianstad – Frontpipes HW (1c)

Nr		Markings body									Markings foot			
		l^{m}l	⊔		xl		lx		^{x}+	+^{x}	$_x$+		+$_x$	
ST	1				1		duglig®	I÷1	o÷b	16'÷stum	o÷b			
ST	2				13\		^{1}V÷8	^{2}X÷2 *	gs	16'÷b^0	gs			
ST	3	I÷7	16'÷fs	16'÷fs	{ }		{ }		e÷e		e÷e		I÷7	
ST	4	I÷6	16'÷d^0		{ }		{ }		c		c		16'÷d^0	I÷6
ST	5	I÷5	16'÷c^0	16'÷c^0	{ }		{ }		B		B	16'÷c^0	I÷5	
ST	6	I÷4	16'÷e^0	16'÷e^0	{ }		{ }		d[]*		d	16'÷e^0	I÷4	
ST	7						18\	V÷3	fs	16'÷gs^0	fs			
ST	8						19\	I÷8	b	16'÷c\	b			
ST	9						20\	I÷9	o÷h	16'÷stum	o÷h			
SF	1				11\			IIII÷1	e\\	16'÷stum	e\\			
SF	2				19			II÷10	o÷ds	16'÷fs\\	o÷ds			
SF	3						9\	IIII÷3	c\\	16'÷d\\	c\\			
SF	4				8\			IIII÷4	gs\	16'÷b\	gs\			
SF	5	IIII÷5		16'÷fs\	{ }		{ }		{ }		e\			
SF	6						6\	IIII÷6	c\	16'÷d\	c\			
SF	7						5\	IIII÷7	d\	16'÷e\	d			
SF	8						4\	IIII÷8	fs\	16'÷gs\	fs\÷fs			
SF	9				3\			IIII÷9	b\	16'÷c\\	b\			
SF	10						11	II÷2	o÷cs\\	16'÷e\\	o÷cs			
SF	11						1\	IIII÷11	d\\		d\\ *			
CT	1						9	III÷1		16'÷stum				
CT	2						8	III÷2		16'÷stum				
CT	3				7			III÷3		16'÷B	A ÷ Gs			
CT	4	III÷4		16'÷Gs	{ }						Fs		III÷4	
CT	5				5			III÷5		16'÷G	[ ]			
CT	6		A 16'	16'÷A	{ }						G÷G	16'÷A	III÷6	
CT	7				3			III÷7		16'÷stum	A			
CT	8	III÷8		16'÷H	{ }						A÷o			
CT	9				1	stum®		III÷9		16'÷stum	[ ]			
NF	1						10	II÷1	ds\\	16'÷stum	ds\\			
NF	2						10\	IIII÷2	o÷d	16'÷f\\	o÷d			
NF	3						12	II÷3	h\	16'÷cs\\	h\			
NF	4						13	II÷4	g\	16'÷a\	g\			
NF	5						14	II÷5	ds\	16'÷f\	ds\			
NF	6						15	II÷6	cs\	16'÷ds\	cs\			
NF	7						16	II÷7	f\	16'÷g\	f\			
NF	8						17	II÷8	a\	16'÷h\	a\			
NF	9						18	II÷9	cs\\	16'÷ds\\	cs\\			
NF	10						2\	IIII÷10	o÷c	16'÷stum	o÷c			
NF	11				20			II÷11	f\\	16'÷g\\	[ ]			

Kristianstad – Frontpipes HW (2c)

Nr		Markings body									Markings foot			
			m		⊔		x			x		x+	+x	x+	+x
NT	1				[ ]		[ ]	V÷1	(1?)÷h	16'÷stum	o÷b			
NT	2						8	I÷2	o÷b	16'÷cs\	1÷h			
NT	3	V÷7		16'÷a0	{ }		{ }	V÷7	[g]*		g			
NT	4						6	V÷4	ds	16'÷f0	ds			
NT	5	V÷5		16'÷cs0	{ }		{ }		H		H		V÷5	
NT	6	V÷6		16'÷ds0	{ }		{ }		cs		cs		V 6	
NT	7				3			I÷3	f	16'÷g0	f			
NT	8				2			V÷2	a	16'÷h0	a÷a			
NT	9						12\	V÷9	o÷b	16'÷stum	o÷b			
SFu	1													
SFu	2													
SFu	3													
SFu	4													
SFu	5													
SFu	6													
SFu	7													
SFu	8													
SFu	9													
SFu	10													
SFu	11													
SFu	12													
SFu	13													
SFu	14													
NFu	1													
NFu	2													
NFu	3													
NFu	4													
NFu	5													
NFu	6													
NFu	7													
NFu	8													
NFu	9													
NFu	10													
NFu	11													
NFu	12													
NFu	13													
NFu	14													

Kristianstad – Frontpipes HW (1d)

Nr		Maker				new back	Comments
		B	L	LS	F		
ST	1	L	L	F	L		
ST	2	L	L	L	L		* correction of “V÷8”? (cross apparently intended for both
ST	3	L	L	F	L	x	V and 8)
ST	4	L	L	L	L	x	
ST	5	L	L	L	L	x	
ST	6	L	L	L	L	x	* only left part of d visible
ST	7	L	L	L	L		
ST	8	L	L	F	L		
ST	9	L	L	L	L		
SF	1	L	L	L	L		nicking must be from before Frobenius (by him dummy)
SF	2	L	L	L	L		* tuning slot
SF	3	L	L	L	L		
SF	4	L	L	L	L		* elongation original; ** behind rack
SF	5	L	L	L	L	x	wall th back =1,15 mm!
SF	6	L	L	L	L		
SF	7	L	L	L	L		
SF	8	L	L	L	L		
SF	9	L	L	L	L		
SF	10	L	L	L	L		
SF	11	L	—	F	L		now without languid! * above the d a half-obliterated ds?
CT	1	L	L	F	L		
CT	2	L	L	F	L		nicking neither from Lorentz nor from Frobenius (in both
CT	3	L	L	L	L		cases dummy!)
CT	4	L	L	L	L	x	
CT	5	L	L	F	L		
CT	6	F/L	L	L	L	x	new upper part
CT	7	L	L	F	L		
CT	8	L	L	F	L	x	
CT	9	L	L	L	L		cut out to use the metal for repairs?
NF	1	L	L	L	L		languid rubbed down!
NF	2	L	L	L	L		* behind rack
NF	3	L	L	L	L		
NF	4	L	L	L	L		
NF	5	L	L	L	L		
NF	6	L	L	L	L		
NF	7	L	L	L	L		
NF	8	L	L	F*	L		* repair only? (very irregular); ** expression behind rack
NF	9	L	L	L	L		* behind rack
NF	10	L	L	L	L		
NF	11	L	L	L	L/F		

Kristianstad – Frontpipes HW (2d)

Nr		Maker				new back	Comments
		B	L	LS	F		
NT	1	L	L	L	L		1 above h could also be a scatch; body exchanged with NT2 (original)
NT	2	L	L	L*	L		* badly repaired but old; body exchanged with NT1
NT	3	L	L	F	L	x	* disappeared to a large extent due to the new back by Frobenius
NT	4	L	L	L	L		
NT	5	L	L	F	L	x	on languid: H
NT	6	L	L	F	L	x	
NT	7	L	L*	L	L		* bevel damaged (1961?)
NT	8	L	L	L	L		
NT	9	L	?	F	L		
SFu	1	L	—	L	L		not to be examined, nailed to the racks
SFu	2	L	—	L	L		no old inscriptions
SFu	3	L	—	L	L		no realistic scales
SFu	4	L	—	L	L		
SFu	5	L	—	L	L		
SFu	6	L	—	L	L		
SFu	7	L	—	L	L		
SFu	8	L	—	L	L		
SFu	9	L	—	L	L		
SFu	10	L	—	L	L		
SFu	11	L	—	L	L		
SFu	12	L	—	L	L		
SFu	13	L	—	L	L		
SFu	14	L	—	L	L		
NFu	1	L	—	L	L		
NFu	2	L	—	L	L		
NFu	3	L	—	L	L		
NFu	4	L	—	L	L		
NFu	5	L	—	L	L		
NFu	6	L	—	L	L		
NFu	7	L	—	L	L		
NFu	8	L	—	L	L		
NFu	9	L	—	L	L		
NFu	10	L	—	L	L		
NFu	11	L	—	L	L		
NFu	12	L	—	L	L		
NFu	13	L	—	L	L		
NFu	14	L	—	L	L		

Kristianstad – Frontpipes RP (1a)

Nr		Pitch c(0)	Key		Cir-cumf.	MW	Cut up	CU trace	Languid			Sheet width	Ø	SW MW	MW CU
			L	F					Th	Bev.	nicks				
ST	1	b^0	gs^0	b^0	147,9	35,3	11,4	9,7	2,3			145,7	47,1	4,12	3,1
ST	2	fs^0	e^0	fs^0	173,4	42,7	11,7		2,2			171,1	55,2	4,01	3,6
ST	3	d^0	c^0	d^0	205,8	52,0	15,5	11,2	2,9		10+0	203,0	65,5	3,90	3,4
ST	4	c^0	B	c^0	219,8	52,8	15,3	12,4	3,4		0+3m	216,8	70,0	4,11	3,4
ST	5	e^0	d^0	e^0	192,4	47,7	14,3	11,5	2,3		0+5m	190,2	61,2	3,99	3,3
ST	6	gs^0	fs^0	gs^0	158,9	38,3	12,0	10,1	2,3		4+3	156,5	50,6	4,08	3,2
ST	7	c^1	b^0	c^1	134,8	31,8	10,3	8,2	1,8			132,6	42,9	4,17	3,1
SF	1	e^2	d^2	e^2	69,8	17,3	5,1	2,6	1,4		0+6	68,0	22,2	3,92	3,4
SF	2	c^2	b^1	c^2	78,6	19,8	5,3	4,0	1,6			76,5	25,0	3,86	3,7
SF	3	gs^1	fs^1	gs^1	93,3	22,7	6,6	4,3	1,7		0+7	91,4	29,7	4,03	3,4
SF	4	e^1	d^1	e^1	112,2	27,7	8,4	6,8	2,2			110,1	35,7	3,98	3,3
SF	5	d^1	c^1	d^1	123,8	30,6	8,9	7,0	2,0			121,2	39,4	3,97	3,4
SF	6	fs^1	e^1	fs^1	101,8	25,0	8,0	4,8	1,8		0+4	99,7	32,4	3,98	3,1
SF	7	b^1	gs^1	b^1	86,0	21,0	6,1	3,9	1,6			84,5	27,4	4,03	3,5
SF	8	d^2	c^2	d^2	74,4	17,7	5,1	3,3	1,5			72,6	23,7	4,09	3,5
SF	9	fs^2	e^2	fs^2	63,0	15,1	4,4	0,0	1,3			61,3	20,1	4,07	3,4
CT	1	ds/e^0	*B	—	221,1	54,3	13,7	11,4	3,2		9+0	218,5	70,4	4,03	4,0
CT	2	B	Gs	B	239,0	58,5	17,7	15,1	3,5			236,5	76,1	4,04	3,3
CT	3	Gs	Fs	Gs	258,0	63,8	18,0	14,7	4,1		9+2	254,4	82,1	3,99	3,6
CT	4	G	F	G	270,0	67,1	21,3	13,9	4,4		5+7	266,9	85,9	3,98	3,2
CT	5	A	G	A	249,0	61,3	17,3		3,2		11+0	246,2	79,3	4,02	3,5
CT	6	H	A	H	229,5	56,5	17,1		3,2			227,0	73,1	4,02	3,3
CT	7	ds^0+	*H	—	213,6	52,0	12,0	9,8	3,1			211,4	68,0	4,07	4,3
NF	1	g^2	f^2	g^2	60,5	14,0	4,2		1,1	65°		58,5	19,3	4,19	3,3
NF	2	ds^2	cs^2	ds^2	71,3	17,4	4,7		1,8		7+0	69,2	22,7	3,98	3,7
NF	3	h^1	a^1	h^1	81,8	19,9	5,9		1,9			79,7	26,1	4,01	3,4
NF	4	g^1	f^1	g^1	96,1	22,7	6,9		1,7	70°		94,0	30,6	4,15	3,3
NF	5	ds^1	cs^1	ds^1	115,8	27,8	8,9	8,1	2,1	70°		113,6	36,8	4,08	3,1
NF	6	f^1	ds^1	f^1	108,0	26,2	7,8		1,8			105,7	34,4	4,04	3,4
NF	7	a^1	g^1	a^1	88,4	21,8	6,4		1,6			86,6	28,1	3,97	3,4
NF	8	cs^2	h^1	cs^2	76,7	18,4	5,7		1,1		*	74,5	24,4	4,04	3,2
NF	9	f^2	ds^2	f^2	64,9	15,8	4,4		1,2			63,2	20,7	4,00	3,6
NT	1	cs^1	h^0	cs^1	129,0	29,9	9,3	7,1	2,4			126,8	41,1	4,25	3,2
NT	2	a^0	g^0	a^0	152,0	36,8	11,2	9,3	2,3		0+10	149,8	48,4	4,08	3,3
NT	3	f^0	ds^0	f^0	181,5	44,0	14,2		2,6		0+9	179,2	57,8	4,08	3,1
NT	4	cs^0	H	cs^0	215,0	51,5	15,9		2,8		0+9	212,0	68,4	4,12	3,2
NT	5	ds^0	cs^0	ds^0	198,3	48,9	13,6		2,7			196,0	63,1	4,01	3,6
NT	6	g^0	f^0	g^0	168,3	40,5	12,0	11,5	2,3			166,2	53,6	4,11	3,4
NT	7	h^0	a^0	h^0	141,7	34,9	10,0		2,0			139,5	45,1	4,00	3,5

Kristianstad – Frontpipes RP (1b)

Nr		Body length					Foot			Wall th			M shape		
		Tot. L	Orig.L	sound.L	SL old		L	L or.	Ø tip	u	l	foot	UL	LL	ULH
ST	1	706		634	667		670		14,9	0,40	0,70		O3	O3	
ST	2	888		810	845		581		15,9	0,35	0,80	0,90	O3	O3	
ST	3	1090		1029	1090?		485		19,2	0,50	0,90	0,85	O3	O3	
ST	4	1233		1157	1220		340	323	19,8	0,50	1,00		O3	O3	
ST	5	994		910	960		505		16,3	0,35	0,75		O3	O3	
ST	6	851		715	755		584		15,9	0,35	0,85	0,75	O3	O3	
ST	7	688		563	592		670		13,4	0,40	0,70	0,70	O3	O3	
SF	1	233		212	233?		671		11,8	0,35	0,55		O3	O3	
SF	2	298		276	298?		632		12,1	0,40	0,65		O3	O3	
SF	3	386		351	386?		588		11,1	0,30	0,65		O3	O3	
SF	4	485		448	485?		509		11,9	0,40	0,65		O3	O3	
SF	5	543		501	543?		428		12,4	0,50	0,80		O3	O3	
SF	6	570		391	423		505		12,3	0,40	0,65		O3	O3	
SF	7	346		311	329		587		11,8	0,35	0,40		O3	O3	
SF	8	276		240	260		628		11,9	0,45	0,45		O3	O3	
SF	9	211		186	211?		669		11,7	0,40	0,45		O3	O3	
CT	1	1068		938			670		17,8	0,50	0,80		O3	O3	
CT	2	1420	1387	1311	?		578		19,5	0,40	0,85		O3	O3	
CT	3	1570	1518	1461	1507		422	407	22,0	0,60	1,20		O3	O3	
CT	4	1652		1555	1652		358	344	20,9	0,55	1,00		O3	O3	
CT	5	1502		1382	1477		443	429	20,9	0,40	1,00		O3	O3	
CT	6	1337		1228	1290		581		19,3	0,50	0,75		O3	O3	
CT	7	1075		948	948		>667		18,2	0,45	0,65		O3	O3	
NF	1	196		179	196?		670	>645*	11,3	0,40	0,60		O3	O3	
NF	2	254		228	254?		628		11,2	0,40	0,65		O3	O3	
NF	3	368		291	306		589		11,0	0,40	0,65		O3	O3	
NF	4	457		372	390		506		11,7	0,40	0,65		O3	O3	
NF	5	542		470	507		427		12,6	0,40	0,70		O3	O3	
NF	6	466		420	437		506		11,7	0,40	0,75		O3	O3	
NF	7	357		332	357?		588		11,6	0,35	0,55		O3	O3	
NF	8	289		259	289?		630		12,4	0,40	0,70		O3	O3	
NF	9	221		200	215		670		11,4	0,35	0,50		O3	O3	
NT	1	687		525	565		671		13,1	0,35	0,75		O3	O3	
NT	2	827		673	705		584		15,3	0,45	0,65		O3	O3	
NT	3	985		859	900		501		16,1	0,45	0,70		O3	O3	
NT	4	1185		1090	1145		343		18,1	0,50	1,00		O3	O3	
NT	5	1043		967	1015		504		16,3	0,45	0,70		O3	O3	
NT	6	844		755	800		582		15,7	0,40	0,65		O3	O3	
NT	7	672		594	635		671		14,6	0,40	0,70	0,75	O3	O3	

Kristianstad – Frontpipes RP (1c)

Nr		Markings body									Markings foot		
		⊔	x|	|x		x+		+x		x+		+x
ST	1		1\		R I 7®		gs		b		gs		
ST	2		2\		R I 7→6® *		e		fs		e		e
ST	3		3\		R I 5®		c		d		c		
ST	4		4\		R I [?]→4® *		B		c		B		
ST	5			5(\?] *	R I 3®		d		e		d		
ST	6			6\	R I 2®		fs		gs		fs		
ST	7			7\	R I 1®		b	1? *	c\		b		
SF	1		1\		R II 9®	e^2	d\\	e\\	e\\		d\\		
SF	2		2\		R IIII 8®	gs^1	b\	~~gs~~\	c\\		o÷b\		
SF	3		3\		R IIII 3®		fs\ *		gs\		fs\		
SF	4		4\		R IIII 6®	e^1	~~e~~\	d\	e\		^{2}d	^{1}d\	
SF	5		5\		R IIII 5®		c\		d\		c\		
SF	6		6\		R II 6®	d^1	~~d~~\	e\	fs\		e\		
SF	7		7\		R II 3®	fs^1	gs\\ !	~~fs~~\	b\		gs\		
SF	8		8\			b^1	c\\	~~b~~\	d\\		c\\		
SF	9		9\		R II 9®	d^2	e\\	~~d~~\\	fs\\		e\\		
CT	1			7	R III 7®		B÷o		RP.÷stum.		B÷o		
CT	2	B	{ }	{ }			G{ }*				Gs	R III 2®	B
CT	3			5	R III 3®		Fs		Gs		Fs		
CT	4		4		R III 4®		F		^{2}(**)	1(*)	F		
CT	5		3		R III 5®		G		A		G		
CT	6		2		R III 6®		A		H		A		
CT	7		1		R III 1®		H÷o		RP.÷stum.		H÷o		
NF	1		9		R IIII 1®		f\\		g\\		f\\		
NF	2			8	R II 2®	h^1	cs\\	~~h~~\	ds\\		cs\\		
NF	3			7	R II 7®	g^1	a\	~~g~~\	h\		a\		
NF	4			6	R II 4®	ds^1	f\	~~ds~~\	g\		f\		
NF	5			5	R II 5®	cs^2	~~cs~~\\	cs\	ds\		cs\		
NF	6			4	R IIII 4®	cs^1	~~cs~~\	ds\	f\		ds\		
NF	7			3	R IIII 7®	f^1	g\	f\	a\		g\		
NF	8			2	R II 8®	a^1	h\	~~a→h~~\	cs\\		h\		
NF	9		[ ]*	[ ]*	R IIII 9®	cs^2	ds\\	~~cs~~\\	f\\		ds\\		
NT	1			7	R V 1®		h		cs\		h		
NT	2			6	R V 8→6®		g		a		g		
NT	3			5	R V 7→5®		ds		f		ds	ds	
NT	4			4	R V 4®		H		cs		H		~~cs~~
NT	5			3	R V 3®		cs		ds		cs		
NT	6			2	R V 2®		f		g		f		
NT	7			1	R V 9→7®		a		h		a		

Kristianstad – Frontpipes RP (1d)

Nr		Maker				new back	Comments
		B	L	LS	F		
ST	1	L	L	L	L		points mouth: hor=17,2 diag=13,1 & 14, Ø≈8, H top = 93
ST	2	L	L	L	L		* probably 8→6 (cf NT 2 and 3)
ST	3	L	L	L	L		
ST	4	L	L	L	L		* probably 6→4
ST	5	L	L	L	L		* 5 with extended horizontal dash
ST	6	L	L	L	L		
ST	7	L	L	L	L		* probably simply an error (signature started at the wrong place)
SF	1	L	L	F	L		
SF	2	L	L	F	L		
SF	3	L	L	F	L		* could be read as 'e→fs\', but less probable (all other corrections
SF	4	L	L	F	L		being into the opposite direction)
SF	5	L	L	L	L		mouth height parallell lines = 49,5 mm
SF	6	L	L	L	L		
SF	7	L	L	F	L		
SF	8	L	L	F	L		
SF	9	L	L	F	L		mouth height parallell lines = 25 mm
CT	1	L	L	L	L		
CT	2	L	L	L	L	x	* only left part of G preserved
CT	3	L	L	F	L		
CT	4	L	L	L	L		* "[Ryg]posiiv"(very thin); ** "Rygpositiv ÷ Princ. 8' ÷ G"; points
CT	5	L	L	L	L		mouth: 34,4 hor, 24,7 and 25,2 dig, H top =168, Ø = 11,6
CT	6	L	L	L	L		
CT	7	L	L	F	L		
NF	1	L		F	L		Ø points ≈ 4,8 mm; * at 185 mm underneath the languid a 25 mm
NF	2	L		F	L		new piece is soldered in
NF	3	L		F	L		
NF	4	L		F	L		
NF	5	L		L	L		
NF	6	L		F	L		
NF	7	L		F	L		
NF	8	L		F	L		* damage with the effect of nicking
NF	9	L		F	L		* still on tuning roll?
NT	1	L	F? *	F	L		* otherwise rubbed down
NT	2	L	L	F	L		
NT	3	L	L	L	L		
NT	4	L	L	L	L		
NT	5	L	F? *	F	L		* otherwise rubbed down
NT	6	L	L	L	L		
NT	7	L	F? *	F	L		* otherwise rubbed down