

Johan Svensson
ampèrian loops - part II
for six musicians and electronics
2015

*commissioned by Levande musik
with support from Swedish Arts Council*

written for Mimitabu

dur: approx. 16 min

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ABOUT AMPÈRIAN LOOPS

ampèrian loops - part II is, as the title suggest, the second piece in the series *ampèrian loops*. all pieces in the *ampèrian loops* series has computer controlled solenoids as a core element of the piece. *ampèrian loops - part I*, from 2013, is written for seven instruments and eight solenoids.

a solenoid is an electromechanical device consisting of an inductive coil around a movable steel or iron slug. when the electromagnet is switched on, the slug goes out. sounds are created when the solenoid slugs hits the objects. the solenoids are controlled with a computer via an arduino (an open-source electronics prototyping platform).

SUGGESTED STAGING

INSTRUMENTATION

piccolo/bass flute

bass clarinet

+ plastic pipe clarinet [length ≈ 3 m]*
+ small metal pieces on threads*

percussion

metal sheet [dim. ≈ 85x35 cm]*
superball, medium mallet, drum stick
handheld milk frother*
two small pieces of wood

violin

violoncello

midi keyboard

[min. 5 octaves with modulation wheel]
+ 5 midi pedals*

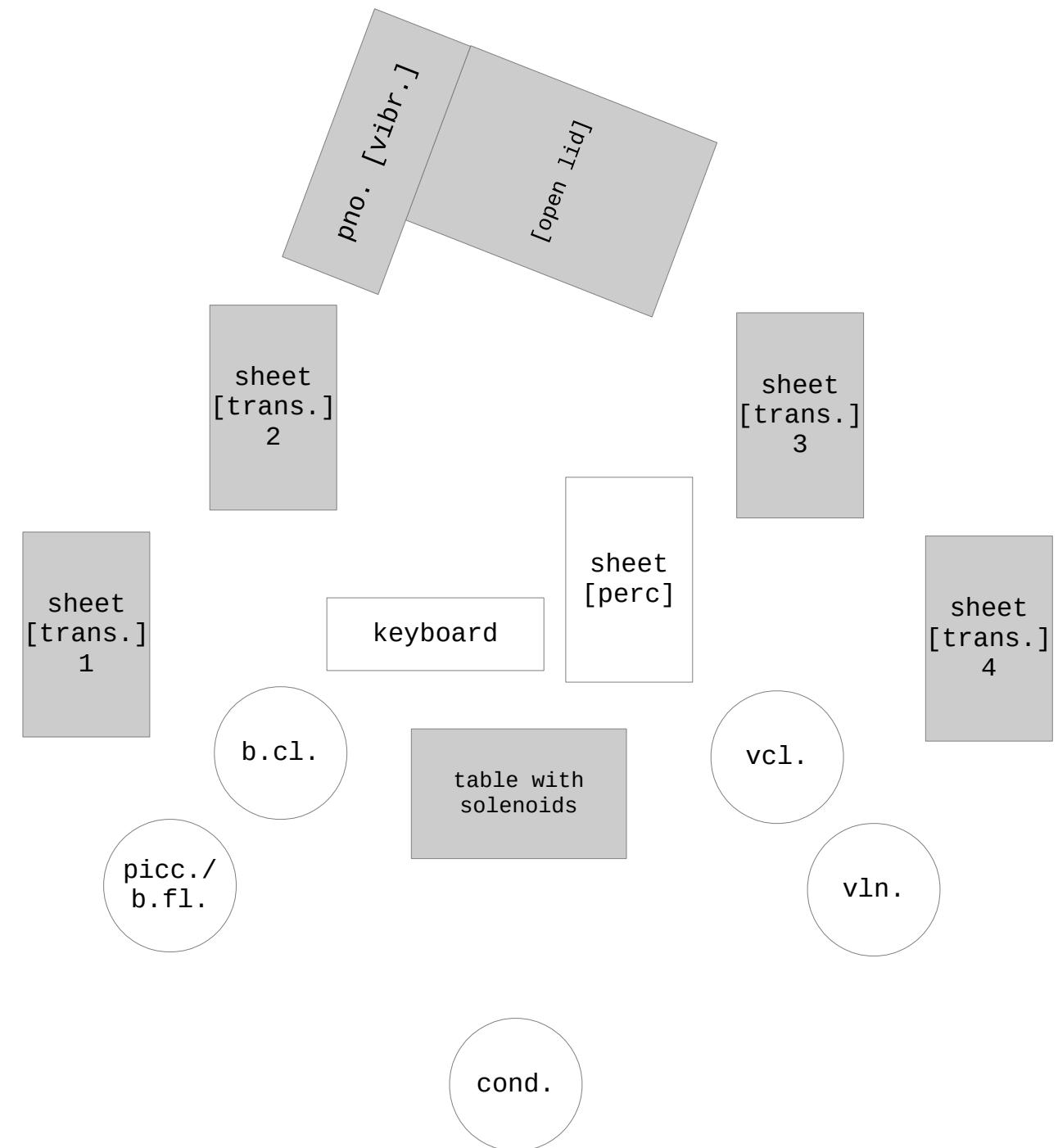
conductor

+ stopwatch

electronics

[controlled by keyboard and pedals]

- 4 transducers* attached on 4 metal sheets [dim. ≈ 85x35 cm]*
- 8 solenoids* hitting 4 metal plates and 4 plastic pipes
- 5 modified mini vibrators* attached inside a **grand piano**
computer with max/msp 6.1.3 or later



* = can be provided by the composer

GENERAL INSTRUCTIONS

dynamics are written in two different ways:

mp = sounding dynamic: mezzo piano. a great amount of action/power might be necessary to reach the written dynamic level.

"ff" = action dynamic: fortissimo. sounding result is probably much softer.



three quarter tones flat, half tone flat, quarter tone flat, natural, quarter tone sharp, half tone sharp, three quarter tones sharp.

staccato, always as short and dry as possible.

PLAYING TECHNIQUES AND SPECIFICATIONS

PICCOLO/BASS FLUTE



tongue pizz. always as short and dry as possible.



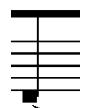
key click trill.



aeolian sounds; pitches mixed with much air sound. this is produced by placing the mouth further away from the embouchure than is usual. the pitches will be approx. a halftone sharper than usual.



whistle tone. unstable, high partials.



air sound. closed embouchure.



flutter tongue



slap.



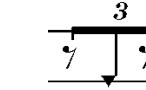
key click trill.



blow on tip of reed from approx. 1 cm

plastic pipe clarinet

this instrument is made from 20 mm PVC pipe. it should be approx. 3 m long and have a reed made from a softer plastic [e.g. from a cream/sour cream package]. picture of mouthpiece to the left.



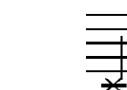
tongue ram. make HT! sound into instrument [percussive effect].

small metal pieces

5-6 metal pieces attached on thin thread. should have a soft high pitched sleigh bell-like sound when shaken.

STRINGS

cello: IVth string should be tuned down one octave
legno battuto.



tap.



damp string by touching it gently without pressing it. one finger touching the string on written pitch and at least two other fingers damping behind it.



drop the bow to make several short bounces. the bounces should last the full written duration.

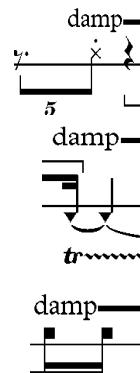


bow on tailpiece: find a low, unstable pitch.

METAL SHEET [PERCUSSION]

the metal sheet used should have the approx. dimensions 85x35 cm, and be identical to the 4 metal sheets used with transducers.

2 small pieces of wood should be attached to the 2nd and 3rd finger of left hand to make it possible to make a sounding finger tremolo on the sheet.

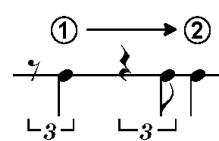


hit edge of sheet with drum stick while damping sheet with left hand; high pitched sound.

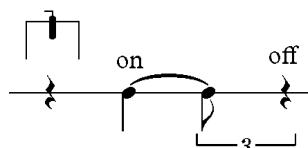
trill with wooden fingertips while damping sheet with same hand.



scratch edge of sheet with drum stick while sheet with left hand



when numbers appear above the note, the sheet should be bent from below. in this piece numbers between 1 and 7 are used; 1 means almost no bending at all (low pitch), 7 means maximum bending (high pitch). the player is to distinguish seven steps with different amount of bending and learn to shift between them as written. in the example to the left, the player is to gradually shift from bending degree 1 to 2. do not damp sheet during the rests when playing this technique.



use an handheld milk frother. put the frother against the upper part of the sheet and turn it on/off according to notation.

KEYBOARD

a midi keyboard with a minimum of 5 octaves and a modulation wheel should be used. the keyboard is controlling the transducers and the solenoids.

in addition, the keyboard player is also using 5 midi pedals to control the vibrators in the piano.

above the keyboard notation there are three staves showing a representation of the sounding result of the keyboard/pedal action.

ELECTRONICS

transducers on metal sheets

4 transducers should be attached on 4 identical metal sheets [dim. ≈ 85x35 cm].

solenoids

8 solenoids should be used, four attached to metal plates and 4 attached to plastic pipes [20 mm PVC; same kind as the clarinet is made from]. each solenoid has a LED attached to itself. Each time a solenoid is hitting an object, the LED is flashing. But the LED is sometimes flashing without having a solenoid hit.

the size of the metal plates should be:

sol. 1-2: approx. 10x4 cm

sol. 3-4: approx. 40x10 cm

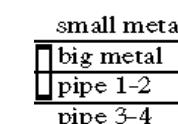
on one end on each of the 4 plastic pipes, a piece of oilcloth should be tightly attached [like a drum skin]. when hitting the oilcloth end with a finger it should sound like a raindrop with pitch. the pipes should be tuned in 4 octaves of Bb:

sol. 1: bb"

sol. 2: bb' [middle octave]

sol. 3: bb

sol. 4: Bb



how the solenoids are distributed in the staff.

vibrators in piano

5 modified mini vibrators should be attached inside a grand piano. the piano should have open lid and be placed behind the ensemble.

HIGH
PEGS
MID
BASS
SUB

the clef showing which vibrator is sounding.

HIGH: high strings, not damped. use strings behind bridge where the strings have very different intonation.

PEGS: on the tuning pegs.

MID: on g#' [middle octave], not damped. the pitch should be heard clearly both when vibrator is on and when it is turned off [fading out].

BASS: on mid-part of bass register, damped. the vibrator should hit several strings. noise rather than pitch.

SUB: a vibrator covered in rubber band on lowest string [low A], not damped. should sound similar to a gran cassa trill.

ampèrian loops - part II

3 $\text{♩} = 80$

b.fl. (pizz.) mp

b.cl.(B♭) (slap) mp

vln. (legno battuto) mp

vlc. IVth string tuned down one octave

metal sheet damp/ trill hit/ scratch damp- (hit edge, high pitched sound) drum stick

sheets transd. (lights and sound)

solenoids small metal big metal pipe 1:2 pipe 3:4 (lights only)

pno. vibrators HIGH FREQS BASS FREQS

keyb.

4

(key clicks) f''

(aeolian sounds) $\text{mp} \text{ p } \text{ mp}$ f''

(tap) f''

III sempre pizz. (tap) $\text{mp} \text{ f''} \text{ mp}$

(legno tratto) l.t. $\text{p} \text{ mp}$ f''

(scratch edge, move stick forwards/backwards) damp p (trill; wooden fingertips; small wooden pieces attached on 2nd and 3rd finger of left hand)

feedback sounds

4 3 4 3

b.fl. *f''* *p* *mp* *p* *mp*

(key clicks) *tr* *f''* *mp pp* *mp pp*

vln. *p* *mp* *p* *mp p* *mp*

l.t. *l.t.* *l.t.* *5"* IV

(III) (pizz.) *mp* *mp* *mp* *pizz.* *5"* (III)

vlc. *f''* *mp* *3* *5"* *p*

damp perc. *mp* *tr* *p* damp *mp* damp *p*

sh. *5"*

sol. *6* *5"* *5"*

pno. vib. *5"* *5"*

keyb. *6* *5"* *5"* *5"*

12

b.fl. *pp*

b.cl.(B♭) *(tr)*

vln. (IV) *mp*

vlc. *p* arco *msp.* *f"*

perc. *p* *mp* *pizz.*

sh.

sol.

pno. vib. HIGH PEGS BASS SUB

keyb.

4
4
15

3
p
f
mp
pp
tr
mp
pp
tr
f
mp
pp
tr
mp
pp
5

4
4
IV
l.t.
p
f
arco msp.
5
f
3
p
5
arco msp.
3
p
5
damp
p
mp
tr
p
5

sh.
sol.
pno. vib.
HIGH PEGS
MID PEGS
BASS
SUB

keyb.
3
#
3
#
3
#
3
#

I8 3 4 4 3 4 A

b.fl. *p* *mp* *tr* *p* *p* *pp* *pp* *p* *pp* *p* *pp*

b.cl.(B♭) *mp* *3* *(tr)* *mp* *f"* *3* *p* *pp* *3* *3* *5* *3*

vln. *l.t.* *p* *l.t.* *5* *l.t.* *5* *p* *l.t.*

vlc. *mp* *pizz.* *arco msp.* *ord.* *III(7)* *II(5)* *III(7)* *III(7)* *II(5)* *III(7)* *IV)* *(noise rather than pitch)* *msp.*

perc. *f"* *mp* *3* *p* *mp* *3* *tr* *p* *3* *superball* *damp* *sim.*

sh. — — — — — — — — — — — —

sol. — *3* *3* *3* — — — — — — — —

pno. — — — — — — — — — — — —

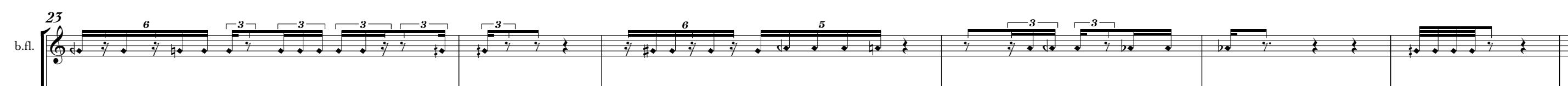
vib. HIGH PEGS BASS SUB — — — — — — — — —

keyb. *3* *3* *3* — — — — — — — — —

(pedals) *P1* *P5* *P1* *P5*

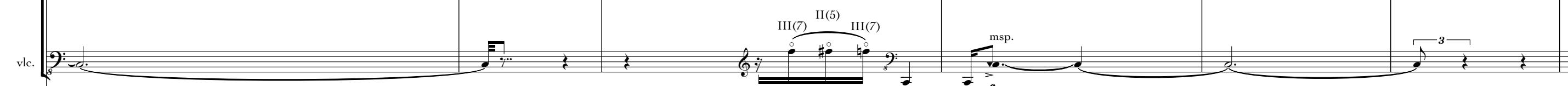
2
4 **3**
2
4 **3**
2
4 **3**
4

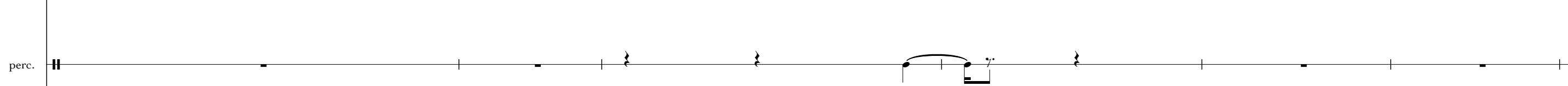
25

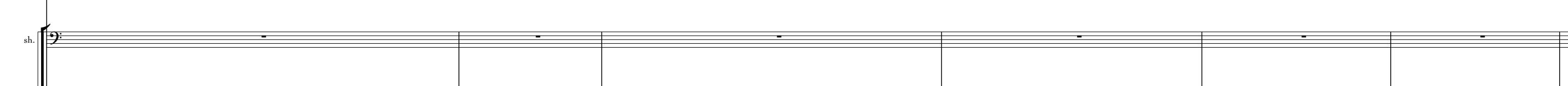
b.fl. 

 b.cl.(B♭) 

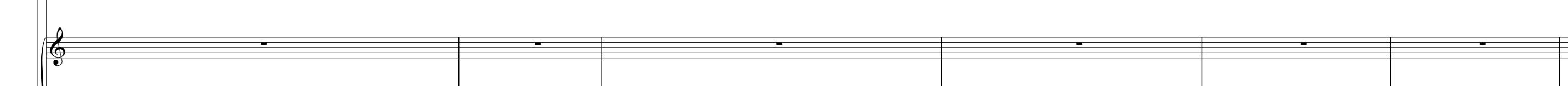
 vln. 

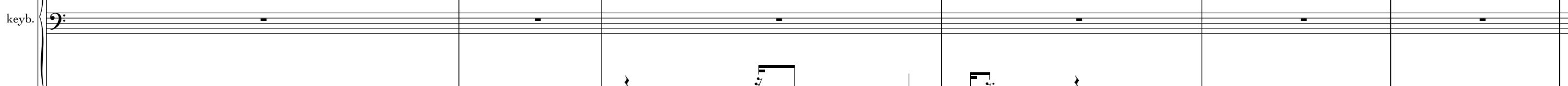
 vlc. 

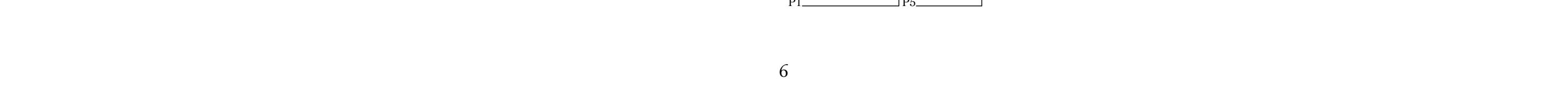
 perc. 

 sh. 

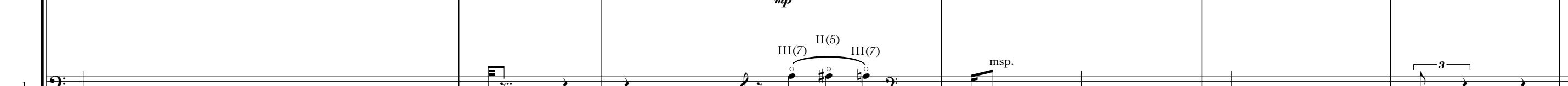
 sol. 

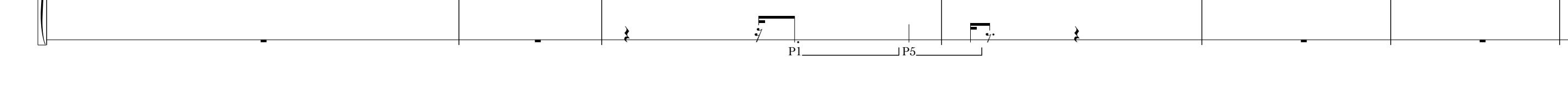
 pno. 

 vib. 

 keyb. 

l.t. 

 III(7) II(5) III(7) 

 P1 

 P5

3 **4**

b.fl.

B

4 *mp p* *3 mp* *p mp* *p mp*

b.cl.(B \flat)

vln.

III(7) II(5)

III sempre

mp p *f*

perc.

damp/trill

hit/scratch

drum stick

p mp *3* *p* *p*

sh.

sol.

pno. vib.

keyb.

P1 P5

3 **4**

7

4
4

34

b.fl. *p* b.cl.(B♭) *mp pp mp pp mp pp mp pp mp*

f'' *p mp* *f''*

vln. *mp* *f''* *p* *l.t.* *msp.*

vlc. *arco msp.*
pizz. (left hand pizz.) *msp.* *f''* *damp* *damp*

perc. *mp* *p* *mp* *3*

sh. *3*

sol. *3*

pno. HIGH MEDIUM LOW
 vib. *6* *6*

keyb. *3*

2
4
4

4
4
38
 b.fl. (tr) *mp* *p* *p* *mp* *pp* *pp* *mp* *p* *mp* *pp* *pp* *mp*
 b.cl.(B♭) *pp* *f*
 vln. *mp* *p* *l.t.* *f* *pizz.* *arco msp.* *p* *msp.*
 vlc. *p* *msp.* *p* *mp* *p* *damp* *p* *mp*
 perc. *p* *mp* *p* *mp* *p* *mp* *p* *mp*
 sh.
 sol.
 pno. *high* *bass* *sub*
 vib.
 keyb.

C

start stopwatch

0" b.fl. bend up slowly 24" 33" 54" 1'03" 1'24" 2'00" 2'21" 2'30" 2'35" 2'51"

b.cl.(B \flat) <pp cresc./dim. approx. 1" bend down slowly

vln. <pp cresc./dim. approx. 1" bow on tailpiece

(IV) msp. vlc. fpp

perc. start freely after b.fl., b.cl. and vln enters
bow on edge ① (bend from below)

sh. feedback sounds

sol.

pno. vib. HIGH PEGS BASS SUB

keyb. release key (solenoid lights and sheet sounds continues)

P5

slow gliss. → ord pos.

① slow bending gliss. → ⑦ approx. 5" dim.

superball

2'08" 3'00"

2
4

3'30" 3'45" 3'48" 4'02" change to picc.

41

b.fl. $\ll \text{pp} \gg$ b.cl.(B \flat) $\ll \text{pp} \gg$

5'23" 42 2" picc. (aeolian sounds) (pizz.)

small metal pieces plastic pipe clarinet (shake) (tongue ram "HT!")

vln. $\ll p \gg$

vlc. approx. 1" dim.

perc. approx. 1" dim.

sh. (put milk frother against upper part of sheet)

sol.

pno. vib. HIGH MID SOB

keyb.

D

3 **4** $\text{♩} = 80$

3 **8**

4 **4**

(damp) II flaut. pizz. arco II flaut. pizz. arco

IV behind bridge (legno battuto)
III (tap) ff

medium mallet (3) (1)

right hand: medium mallet and drum stick

(percussive sounds, fast repetitions) (soft pitches)

(low cluster) pp f pp

P5 P2 P1 P4

47

picc.

2 4 **3 8** **1 4** **3 8** **2 4** **3 4** **1 4** $\text{d} = 72$ **4 4** $\text{d} = 80$ **2 4** **3 4**

(air sound,
closed embouchure)

metal pieces

plast. pipe

pizz.

Vln.

vlc.

perc.

sh.

sol.

pno. vib.

keyb.

(bow bounce)
(ord)

IV behind bridge
(legno battuto)
III (tap)

damp
(at bottom)
drum stick
(hit) (scratch)

damp
drum stick

medium mallet
③ → ①

④ → ①

(percussive sound)

P1 P5 P2 P1

3
4
5
8
4
2
E
5
4
5
8

picc. *mf*
 metal pieces *p*
 plast. pipe
 Vln. *mp* arco II flaut.
 vlc. pizz. *ff*
 perc. *mf* hit with fist damp *pp* medium mallet
 sh. *f*
 sol. *pp*
 pno. vib. *high* *mid* *sub*
 keyb. (cromatic cluster)

P1 P5

5
8 **2**
4 **4** = 72 **3**
4 = 80 **5**
8 **4**

picc.
 metal pieces
 plast. pipe

Vln. flaut.
 vlc. III(7) II(5) III(7) III(7)
 ff 8vb (only C)

perc. on off sim. medium mallet

sh. sol.
 pno. vib. HIGH FREQ. BASS

keyb.

P1 J5 JP1 P5 P1 P2 P4 P2 P4 P5 P1 P5

4 4 3 4 2 4 3 8

69

picc. -

metal pieces

plast. pipe

Vln. arco flaut. pizz. arco flaut. pizz. arco flaut.

vlc. *mp* III IV behind bridge
(legno battuto)
III (tap) *ff*" *mp* III IV behind bridge
(legno battuto)
III (tap) *ff*" *mp* III

perc. *p* →④ *mf* ① →② ① *f* →⑤ →①

sh. *pp* *f* *pp* *f* *pp*

solf. *5* *5* *3* *3* *5* *6* *3*

pno. vib. HIGH MEDIUM LOW BASS

keyb. *5* *5* *3* *3* *6* *6*

3
 8
 1
 4
 4
F
 75 3x
 picc.
 ff pp <f
 (only air)
 metal pieces
 plast. pipe
 pp <"ff"
 pizz.
 Vln.
 f
 mp
 arco flaut.
 I
 vlc.
 mp pp <f
 damp (at bottom)
 drum stick
 perc.
 f pp <f

accel.
 = 72
 3
 4
 = 80
 2
 4
 3
 4

sh.
 sol.
 pno.
 vib.
 HIGH
 MID
 SOB
 keyb.

P2 P1 P5 P1 P1 P5

3

4

5
44
4

p

81

picc.

metal pieces

plast. pipe

Vln.

mp

vlc.

III(7) II(5) III(7)

mp p mp mp p

flaut. I

(IV) msp.

damp/ trill

hit/ scratch

drum stick

damp

perc.

sh.

sol.

pno. vib.

keyb.

pp

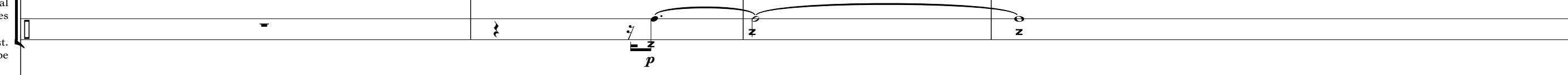
(buzzing)

P5 P1 P5 P1 P5 P1 P5 P1 P2 P1

4
4

85

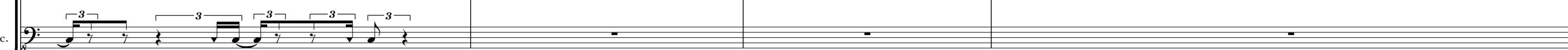
picc. 

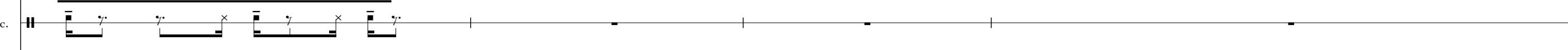
metal pieces 

plast. pipe

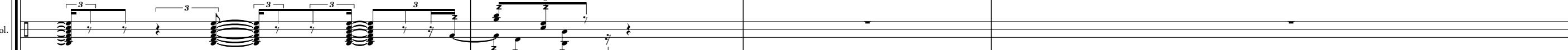
(left hand pizz.)

Vln. 

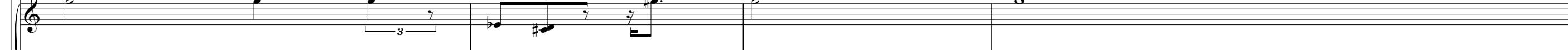
vlc. 

perc. 

sh. 

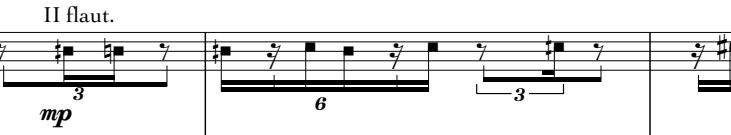
sol. 

pno. vib. 

keyb. 

2
4

accel.

II flaut. 

4
4

$\text{J} = 80$

P2 P3 P1 P4



89
1 **G** **3** **4** **2** **4**

4
4

95

picc. - - - - - - - - - - - - - - - - -

metal pieces - - - - - - - - - - - - - - - -

plast. pipe - - - - - - - - - - - - - - - -

ff

2
4

mf ff

p f

3 3 3 3 3 3 3 3 3 3 3 3 3 3

4
4

3 3 3 3 3 3 3 3 3 3 3 3 3 3

6

3 3 3 3 3 3 3 3 3 3 3 3 3 3

3 3 3 3 3 3 3 3 3 3 3 3 3 3

Vln. - - - - - - - - - - - - - - -

arco II flaut. pizz.

mp f

IV behind bridge (legno battuto)
III (tap)

IV behind bridge (legno battuto)
III (tap)

vlc. - - - - - - - - - - - - - -

mp

fff

p

8vb

perc. - - - - - - - - - - - - -

p

f

① ② ⑤ ①

sh. - - - - - - - - - - - - -

pp

f

pp

f

mid high low

sol. - - - - - - - - - - - - -

pno. vib. - - - - - - - - - - - - -

keyb. - - - - - - - - - - - - -

HIGH MEDIUM LOW

BASS BASS

P5 P5 P1

102
 picc.
 metal pieces
 plast. pipe

Vln. arco II flaut. IV behind bridge (flaut.)
 vlc. (IV) pizz. IV (tap)
 perc. ② → ⑥ → ① hit with fist damp
 sh. high → low f (buzzing)
 sol.
 pno. vib. HIGH FREQS BASS pitch sustained
 keyb.

mod. wheel: 100% P2 P4

3 8
7 16
3 8 rit.
4 4

H
4
4 *d = 72*

108

picc. *mp* **p** **ff** *mf* **ff** *mf* **f** **fff** **f**

metal pieces
 plast. pipe

flaut. I
 Vln. *mp* **p** **ff**

vlc. *8vb* (only C) **ff**

perc. **on off** **sim.** **medium mallet** **f**

sh. **(buzzing)**
 sol. **(impulses)** **f** **mid** **high**

pno. **vib.** **HIGH** **MID** **SOB**

keyb.

3 4 4 2 4 rit. 4

108 109 110 111 112 113 114 115

P2 P2 P2 P2 P2 P2 P2 P2

4
4 $\text{♩} = 72$

picc. mp p

3
4 $\text{♩} = 80$

metal pieces
 plast. pipe ff mf ff mf ff f

1
2
4
4

flaut. I
Vln. mp p

pizz. f

IV behind bridge
(legno battuto)
III (tap)
fff 5 5 5 5 5 5

 medium mallet

perc. on off sim.

 ff

sh. f

sol.

pno. vib. HIGH MEDIUM LOW

 high → low

keyb.

P2 P4 P2 P4 P2 P4 P2 P4

2
 4 4
 120 $\text{♩} = 72$

picc. *mp*
 metal pieces
 plast. pipe
ff *mf* *ff* *mf* *ff* *mf*

arco
 flaut.
 II
 Vln. *p* *flaut.*
ff *ff* *ff* *ff* *ff* *ff*

vlc.
ff *ff* *ff* *ff* *ff* *ff*

perc.
on *off* *sim.*

sh.
f
 sol.
 pno.
 vib.
 HIGH
 MEDIUM
 BASS

keyb.
P2 *P4* *P2* *P2* *P4* *P2* *P2* *P4* *P2* *P2* *P4* *P2*

3
84
4 I4
4

127

picc. *mp*

metal pieces

plast. pipe

Vln. *pp* IV behind bridge (flaut.) flaut. III *mp* 5

Vlc. IV (tap) IV behind bridge (flaut.) *pp*

perc. damp/trill hit/scratch (scratch, shift fast forwards/backwards) drum stick damp *p* (trill, wooden fingertips)

sh. (buzzing)

sol.

pno. vib. mod. wheel: 100%

keyb.

4

3
4

152

picc. *mp*

metal pieces

plast. pipe *ff*

Vln. flaut. *mp*

vlc. *ff*

perc. on off

sh. *f*

sol.

pno. vib. HIGH MED SOFT

keyb.

(flz.)

change to b.cl.

P4

3
 4

4
 4 $\text{♩} = 80$

3
 4 $\text{♩} = 72$

4
 4

5
 4

3
 4

136

picc. mp
 metal pieces
 plast. pipe

Vln. flaut. mp

vlc.

perc.

sh.

sol.

pno.
 vib. HIGH FREQ. sim. pitch, sustained

keyb.

P2
 P3
 P4
 JP1
 JP3
 P2
 P2

3

4

3

4

141

picc. *mp*

metal pieces

plast. pipe

Vln.

vlc.

perc.

sh.

sol.

pno. vib.

keyb.

change to b.fl.

P2 P2 P2 P2

4 **J**
4 **3** $\downarrow = 80$
4
2 **4**
4
3 **4**

b.fl.
 (blow on tip of reed from approx. 1cm)
p
b.cl.(B♭)
f'' (key clicks)

Vln.
 IV behind bridge (flaut.)
pp
ff''
 IV (tap)

vlc.
 IV behind bridge (flaut.)
pp
ff''
 IV (tap)

perc.
 damp/trill hit/scratch
 drum stick damp
p
tr

sh.
sol.
 buzzing rit. → separate impulses
 pitch sustained sim.

pno.
vib.

mod. wheel: 100% → 25%

keyb.

P3 | P2 | P3 | P4 | P4 | P3 | P2 | P1 | P3 | P4 | P3 | P2 | P1 | P3 | P4 | P4 |

$\text{♩} = 72$

3 **4** **4**

154

b.fl.

p (aeolian sounds)

tr

"f" (key clicks)

p

tr

"f"

Vln.

pp

"ff"

IV (tap)

IV behind bridge (flaut.)

Vlc.

pp

"ff"

IV (tap)

perc.

damp

p

tr

sh.

sol.

pno. vib.

buzzing

rit.

separate impulses

mod. wheel: 100%

0%

keyb.

P1 P2 P1 P2 P3

This musical score page contains six staves of music. The top staff features woodwind instruments (b.fl., b.cl. B♭) with specific attack instructions like 'p' and 'tr'. The second staff includes violin (Vln.) and violoncello (Vlc.) parts, with dynamics 'pp', 'ff', and 'IV (tap)'. The third staff is for percussion (perc.), with 'damp' and 'tr' markings. The fourth staff includes strings (sh., sol.) and piano/vibraphone (pno. vib.), with 'buzzing' and 'rit.' instructions. The fifth staff is for keyboard (keyb.), showing a modulating section with 'mod. wheel: 100%' and '0%'. The bottom staff provides performance notes for 'P1', 'P2', 'P3', and 'P4'. The page is set in common time (indicated by '3', '4', and '4') at a tempo of $\text{♩} = 72$.

4
4 p

157

b.fl. (pizz.) **p**
 b.cl.(B♭) (slap) **p**

Vln. (left hand pizz.) l.t. l.t. l.t. l.t. l.t.
 vlc. (IV) arco msp. **p**

perc. damp **p**
 tr. 5

sh. rit... → separate impulses
 sol. buzzing (buzzing)
 pno. vib. HIGH FREQ. BASS

mod. wheel: 100% → 25% **pp**
 keyb.

161

b.fl.

b.cl.(B♭)

Vln.

vlc.

perc.

sh.

sol.

pno.
vib.

keyb.

release key (sheet sounds continues)

This musical score page contains six staves of music. The top two staves feature woodwind instruments: bassoon (b.fl.) and bass clarinet in B-flat (b.cl.(B♭)). The middle section includes a violin (Vln.) and a cello (vlc.). A single staff for percussion (perc.) follows. The bottom section consists of three staves: snare drum (sh.), solo vibraphone (sol.), and a combined piano/vibraphone (pno.vib.) staff. The final staff is for a keyboard instrument (keyb.). Measure 161 begins with eighth-note patterns in the woodwinds and bassoon, transitioning to sixteenth-note patterns. The violin and cello provide harmonic support with sustained notes. The percussion and vibraphone play rhythmic patterns, while the keyboard provides harmonic underpinning. Measure 162 concludes with a dynamic release, indicated by the instruction "release key (sheet sounds continues)".

3
4

K

168

b.fl. as long as the metal sheets are sounding

b.cl.(B \flat) as long as the metal sheets are sounding

Vln. as long as the metal sheets are sounding IV behind bridge (flaut.)

vlc. as long as the metal sheets are sounding IV (tap) IV behind bridge (flaut.)

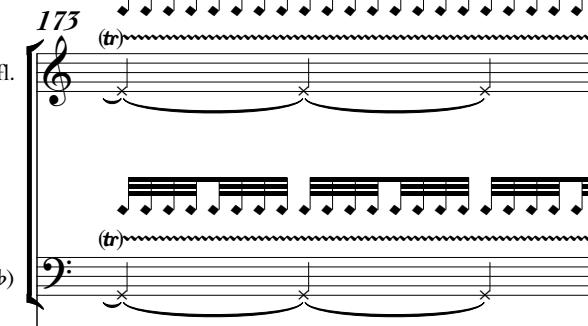
perc. as long as the metal sheets are sounding damp

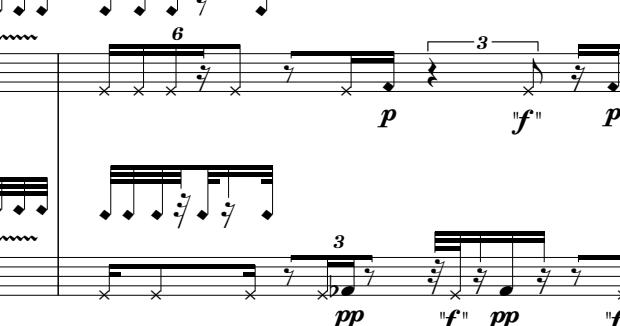
sh. as long as the metal sheets are sounding

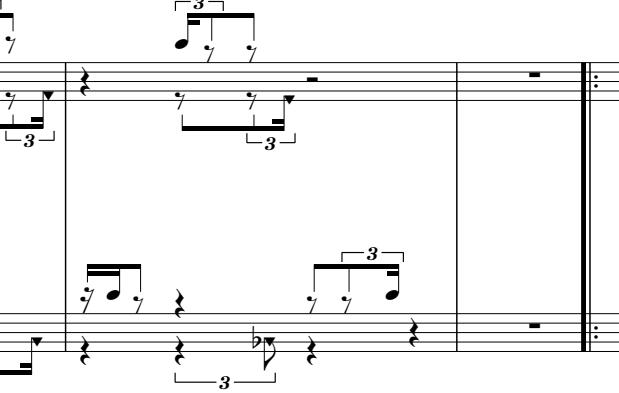
sol. as long as the metal sheets are sounding buzzing rit. separate impulses buzzing rit. separate impulses buzzing

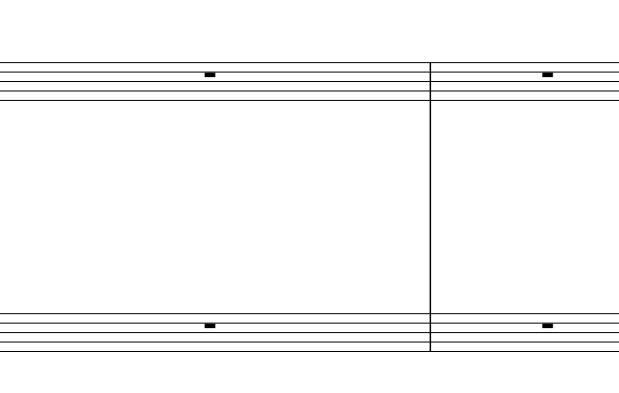
pno. vib. as long as the metal sheets are sounding mod. wheel: 100% 0% 100% 25% 100%

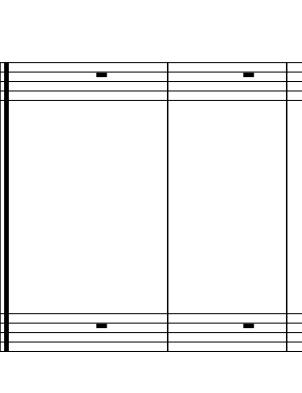
keyb. as long as the metal sheets are sounding

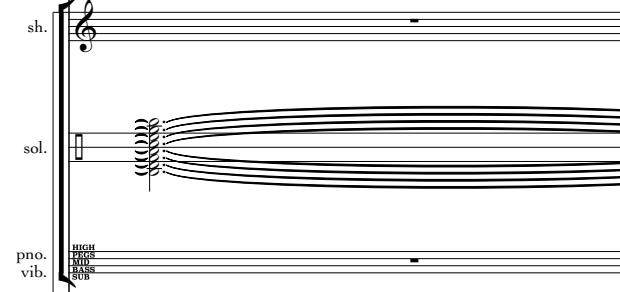
3
4
173
 b.fl. (tr) 

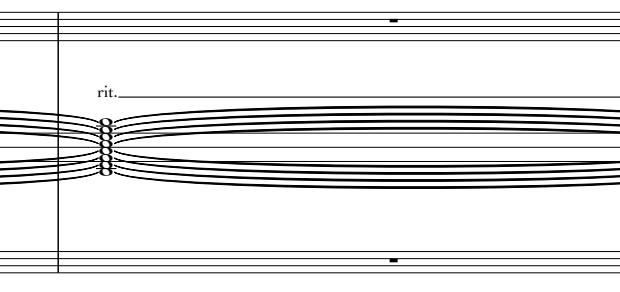
4
6
 b.cl.(B♭) (tr) 

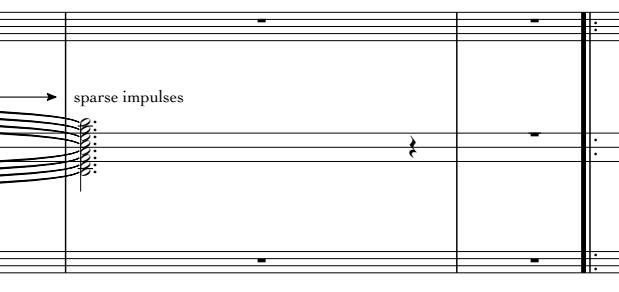
Vln. 

vlc. 

perc. (tr) 

sh. 

sol. rit. 

pno. vib. 

keyb. 

2
4
L
 $4x \text{ } \bullet = 120$

5
16

4
5
16
4

4
4
5
3
4
4
3x
5
16
2
4
5
16
3
4

181

b.fl.

p *sempre*

b.cl.(B♭)

p *sempre*

Vln.

pizz.
p *sempre*

vlc.

pizz.
p *sempre*

perc.

sh.

sol.

pno.
vib. HIGH
MIDDLE
LOW
BASS

keyb.

3
 4 3
 16 3
 4 3
 16 3
 4 3x
 b.fl. b.cl.(B \flat) 4x
 Vln. vlc.
 perc.
 sh.
 sol.
 pno.
 vib.
 keyb.

5
 16 4
 4

4

189

4
4 5
16 4
4 5
16 4
4 2x 5
16 3
4 3
16 3
4 3
16 2
4

197

b.fl.

b.cl.(B♭)

Vln. arco

vlc. arco

perc.

sh.

(buzzing)

sol.

pno.
vib.

keyb.

M

p = 80

208 *tr*

4 *p* **3** *6* **4** *p*

b.fl. *f''*

p *pp* *3* *5* *3*

tr

b.cl.(B♭) *f''*

IV behind bridge (flaut.) *pp* *f''* *ff''* *6* *6* IV (tap)

Vln. *f''* *f* III msp.

IV behind bridge (flaut.) *pp* *f''* *ff''* *6* *6* IV (tap)

vlc. *f''*

damp

perc. *p* *tr* *p*

sh.

sol.

pno. HIGH MEDIUM LOW vib. *pitch sustained* *sim.*

keyb. *3* *3* *3*

P2 *P1* *P4* *P3* *P2* *P1* *P4* *P3* *P1* *P3*

215

3 **5** **3** **4**

This musical score page contains eight staves of music. The top three staves are blank, while the bottom five staves contain musical notation. The instruments represented are: bassoon (b.fl.), bass clarinet in B-flat (b.cl.(Bb)), violin (Vln.), violoncello (vlc.), percussion (perc.), snare drum (sh.), solo piano (sol.), and keyboard (keyb.). The score is divided into measures by vertical bar lines. Measure 1 consists of four measures of common time (3/4). Measure 2 consists of one measure of common time (5/4) followed by two measures of common time (3/4). Measure 3 consists of one measure of common time (4/4). The notation includes various note heads, stems, and rests. The keyboard staff shows complex patterns of eighth and sixteenth notes. The piano staff features sustained notes with grace notes. The percussion staff includes several eighth-note patterns. The solo piano staff has a prominent bass line with sustained notes. The violin and cello staves are blank.

b.fl.

b.cl.(Bb)

Vln.

vlc.

perc.

sh.

sol.

pno. vib.

keyb.

P1 J P2 J P1 J
P4 J P2 J P4 J P3 J

P2 J P1 J
P4 J P3 J

P2 J P3 J

P1 J P2 J P1 J P2 J
P3 J P4 J P2 J P4 J P1 J P2 J P4 J P3 J

P1 J P2 J P1 J P2 J
P2 J P1 J P4 J P2 J P4 J P1 J P2 J P4 J P2 J P4 J P3 J

3
44
42
43
4

220

b.fl.

b.cl.(B♭)

Vln.

vlc.

perc.

sh.

sol.

pno.
vib.

keyb.

P2 | P1 |
P4 | P3 |

P2 | P1 |
P4 | P3 |

P1 | P3 |
P4 | P2 | P4 |

P2 | P3 |
P4 |

P1 | P2 |
P4 |

3

4

227

b.fl.

b.cl.(B♭)

Vln.

vlc.

perc.

sh.

sol.

pno.
vib.

keyb.

N

4

4

p

tr

f

tr

f

IV

l.t.

p

f

III sempre
msp.

f

damp

p

tr

3

3

3

3

3

6

6

6

3

3

3

3

3

3

6

6

6

3

231

b.fl.

b.cl.(B♭)

Vln.

vlc.

perc.

sh.

sol.

pno. vib.

keyb.

p *f* *tr.* *f* *mp* *tr.* *f* *tr.* *f* *mp*

pp *f* *tr.* *f* *mp* *f* *tr.* *f* *mp*

l.t.

(legno battuto)

p *f* *pizz.* *mp*

f *arco msp.* *p*

damp.

p *mp*

feedback sounds

6 *6*

3 *3*

6 *6*

3 *3*