Autumn Voices

for violin and electronics

2001

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James Wood

Autumn Voices was commissioned by the BBC for Mieko Kanno, and is dedicated to her.

The first performance was given by Mieko Kanno and the composer at the Huddersfield Festival (St. Paul's Hall) on 30 November 2001

Autumn Voices was written and realised between September 2000 and April 2001.
I am grateful to Mieko Kanno for her constant collaboration during this period, and also for recording many of the samples from which the electronic sounds have been derived - *JW*.

Instrumentation

Solo violin
Triggerist (keyboard-player)

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Duration: 15 minutes approx.

Performing material (Max MSP Patch for the computer, rehearsal CD and solo violin part) available from
James Wood Edition, Bancroft, Rectory Lane, Fringford, Bicester, Oxon OX6 9DX - JW@rogosanti.demon.co.uk

Notes for performance

The violin should be amplified, and carefully balanced so it is completely integrated with the electronic sounds. care should be taken to find a satisfactory overall level - the violin amplification should not be consciously excessive, and so the general level should not be too loud, whilst still providing the audience with a certain presence and close involvement with the spatialised sounds and the violin.

The triggerist should be positioned in the centre of the hall, next to the mixing desk. The role of the triggerist is to trigger sequences from the computer. Although he plays only some fifteen notes, it should be realised that his role is important and essentially musical, since he responds to and leads the soloist in a similar way to an accompanist or as in chamber music. Hence the triggerist should be a musician, not merely a computer-operator. From his position in the centre of the hall he is also well situated to help the sound engineer achieve a good balance between the violin and electronics.

Certain of the longer electronic sequences require precise synchronisation to be maintained between violin and electronics, and so a click-track is used just for these sections. The click-track is triggered together with the sound-files, and is sent as an audio signal out of 2 outputs of the computer (normally nos. 9 and 10) - one output is sent to the violinist and the other to the triggerist. It is strongly recommended to use lightboxes as click-track monitors, although headphones can be used if desired. The start and stop points of the click-track are marked in the violin part and the score.

Where synchronisation is not controlled by the click-track, entries are led either by the violinist or the triggerist (see note on page 4), and so it is important that the triggerist can see the violinist clearly from his central position. However, since entries given by the triggerist provide the violinist with audible cues, it is not necessary for the violinist to see the triggerist.

Max MSP Patch

The electronic sounds are triggered from the computer using a Max MSP Patch, available from the composer. For each of the possible technical configurations (see page 6) there are two versions of the Patch - one for medium to large-sized halls and one for small, dry halls. Each of these versions has a slightly different reverberation setting within the sound-files. When the Patch is loaded, the default version (Preset 1) will be active - if the version for dry halls is required, simply select Preset 2 from the keyboard (or on the screen) and use this Preset throughout.

A rehearsal CD is available (together with the violin part) for use by the violinist when working at home, with all the sounds mixed down to mono on the left channel, and the click-track on the right channel - hence the click track can either be played as an audio signal to the right speaker, or can be fed directly into a light-box.

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Radio Transmission

If the performance is recorded for radio transmission (or other any other purpose requiring a stereo mix-down), there is a version of the Patch which simultaneously decodes the ambisonic (B-Format), spatialised sound-files into stereo. These are sent out of outputs 11 and 12 (i.e. outs 3 and 4 of MOTU 2408 #2). It is strongly recommended that the recording engineer takes a direct feed from these outputs in order to achieve a good balance between violin and all the electronic sounds. However, it should be realised that this Patch uses about 15% to 20% more CPU power (in the case of a 400MHz G3 processor) than the normal, performance-only Patch, and so should only be used when this stereo mix is needed, and when the computer's processor is at least as fast as that recommended in the Technical Specifications on page 6.

Output-to-speaker routings (8 - speaker configuration)

[Refer to speaker layout on page 7]

MOTU 2408#1
Out 1 => sp 1
Out 2 => sp 2
Out 3 => sp 3
Out 4 => sp 4
Out 5 => sp 5
Out 6 => sp 6
Out 7 => sp 7
Out 8 => sp 8

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MOTU 2408#2
Out 1 => click lightbox#1
Out 2 => click lightbox#2
[version for additional Radio Transmission only]
Out 3 => stereo left channel
Out 4 => stereo right channel

Microtonal symbols

- 1/4-tone sharp
- 1/4-tone flat
- 3/4-tone sharp
- very slightly flat (about 1/8th tone)
- very slightly sharp (about 1/8th tone)
- very slightly (about 1/8th tone) flatter than a normal flat thus technically 5/8th-tone flat
- very slightly (about 1/8th tone) sharper than a normal sharp thus technically 5/8th-tone sharp
- very slightly (about 1/8th tone) flatter than a normal sharp thus technically 3/8th-tone sharp

Misc. symbols

s.t. sul tasto
p.o. pos. ord

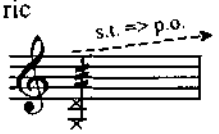
s.t. ⟶ p.o. gradual transition from sul tasto to pos. ord.

↑ cue comes from triggerist, so just follow click-track or computer sounds

↓ triggerist takes cue from violin
(in some instances the violinist should 'lead' with a visual cue or up-beat - in other places the triggerist will be able to follow the violinist without any visual cue

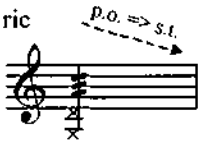
col leg ricochets - some examples

c.l. ric



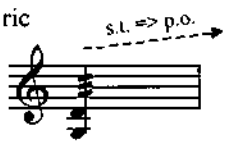
col leg ricochet on open D and G strings
lightly damp strings with l.h.
during ricochet, let bow move from sul tasto to pos ord (only about 3 - 5 cm)
resulting in upward glissando

c.l. ric



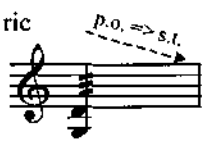
col leg ricochet on open D and G strings
lightly damp strings with l.h.
during ricochet, let bow move from pos. ord to sul tasto (only about 3 - 5 cm)
resulting in downward glissando

c.l. ric



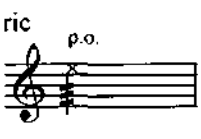
col leg ricochet on open D and G strings
do not damp strings with l.h.
during ricochet, let bow move from sul tasto to pos ord (only about 3 - 5 cm)
resulting in upward glissando (less obvious than when strings are damped)

c.l. ric



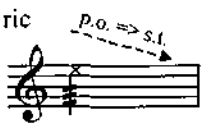
col leg ricochet on open D and G strings
do not damp strings with l.h.
during ricochet, let bow move from pos. ord to sul tasto (only about 3 - 5 cm)
resulting in downward glissando (less obvious than when strings are damped)

c.l. ric



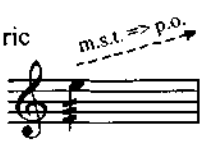
col leg ricochet on open E string
lightly damp string with l.h.
pos. ord (do not move bow position during ricochet)

c.l. ric



col leg ricochet on open E string
lightly damp string with l.h.
during ricochet, let bow move from pos. ord to sul tasto (only about 3 - 5 cm)
resulting in downward glissando

c.l. ric



col leg ricochet on open E string
do not damp string with l.h.
during ricochet, let bow move from molto sul tasto to pos ord about 5 - 8 cm)
resulting in steep upward glissando

N.B. In every case the glissandi are produced only by the movement of the bow position relative to the bridge, and never by the left hand.

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General notation

Staves/voices in the score

Top (small) stave	Violin sounding pitches
V	Violin played pitches
T	Triggers - these notes merely trigger the sound-files in the computer (notated in the staves below) - they have no sound of their own. The name of the sound-file is written below each trigger note.
A	Birdsong-derived melodies - The starting point (and in most cases the ending point) of each phrase is shown precisely, but within this framework the rhythms are depicted only very approximately. Likewise the infinitely subtle degrees of amplitude (dynamic), duration and articulation within each phrase go far beyond the scope of conventional notation, and so are not shown here. Furthermore the pitches shown represent only one element of the composite timbres employed and so provide only a rough guide.
B	Ocarina-derived voices - as with the birdsong, the pitches shown represent only one element of the composite timbres employed and so provide only a rough guide.
C	Wood-derived sounds.

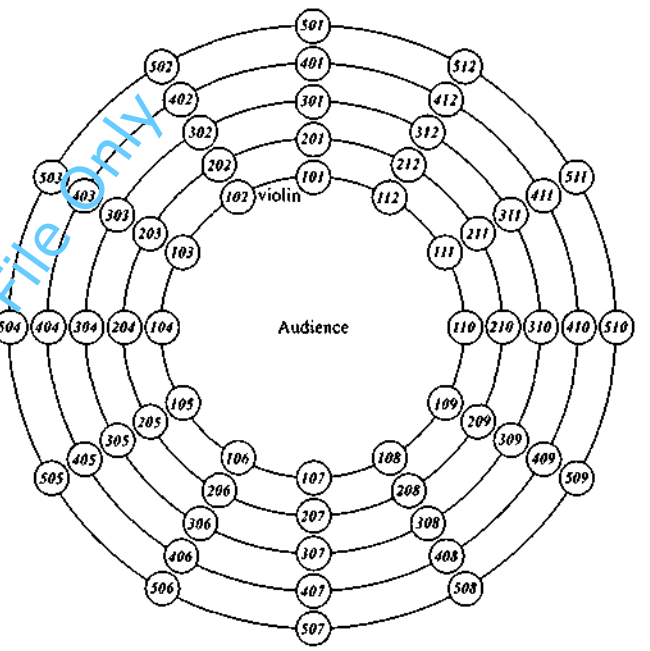
Spatialisation

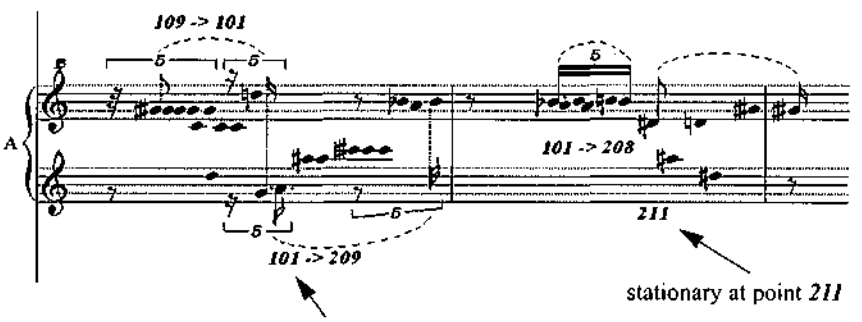
All the electronic sounds are spatialised around the audience according to the following plan -

In the case of the birdsong melodies, the spatial position of each phrase is indicated by the number in italics - the first digit indicates distance (*101 - 112* being the closest, *501 -512* being the most distant) and the second two digits represent the azimuth (or angle). Each phrase is either stationary (eg the final phrase in the example below) or moving (as in the first three phrases below). In the case of the moving phrases, these follow a straight line between the points given, and so will often appear to the audience to fly overhead. The speed of movement is normally determined by the length of phrase (so the very short phrases in the example below will move extremely quickly). This information can be used as an indication of overall dynamics of each phrase, *101 - 112* being loud and *501 -512* being very quiet.

The ocarina-derived voices are also spatialised in this way, although these voices are more accompanimental in nature, and are usually set at a fairly constant distance, a little more distant than the birdsong. Their spatial positions are not notated in the score.

The live violin should be balanced as if coming from the nearest *(101 - 112)* zone.





stationary at point *211*

moving from point *101* to point *109* over the duration of the phrase

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Technical Requirements

Autumn Voices can be performed in various technical configurations, depending on the size of the hall. Medium to large-sized halls will need the full configuration of 8 speakers, whereas smaller halls could use 6 speakers, and very small halls could make do with 4. In halls which, for whatever reason, forbid the placement of speakers around the edge of the audience, it is even possible to perform the piece in stereo, although this deprives the audience of the crucial element of spatialisation which is an integral part of the piece. The following technical specification is based on the full and recommended configuration of 8 speakers.

Speakers

8 speakers (Meyer or equivalent - highly recommended: ATC)
[Speakers should be chosen keeping in mind the predominance of (delicate) very high frequencies]
1 or 2 sub-bass (optional)
If the hall is greatly longer than it is wide , and the distance between the centre and speakers 1, 2, 5 and 6 is significantly greater than that between the centre and speakers 3, 4, 7 and 8, the latter four speakers should ideally be delayed by an appropriate amount - in this case **delay units** will be needed for speakers 3, 4, 7 and 8.

Computer

PowerMac (Blue G3/400MHz or faster) equipped with:
128Mb RAM (minimum)
7200 rpm (or faster) Wide Ultra2 SCSI hard drive with at least 2Gb free space
MOTU 324 multi-channel sound card
2 x MOTU 2408 audio interfaces
MIDI interface (N.B. USB interface needed for Blue G3 or later models)
Max/MSP software (*see note below)

Desk

Ins 8 audio inputs from the Mac (via 2408 #1) (See page 3 for output Routings to speakers)
2 extra audio inputs from the Mac (via 2408 #2) for click track (one to violin, the other to triggerist)
1 or 2 mic inputs from the violin
Total 11 or 12 inputs, plus 2 extra for stereo mix (radio transmission) if required

Mics

1 or 2 microphones suitable for the violin
[much of the violin part consists of harmonics (usually very high frequency) which are quite delicate, and so microphones should be chosen with this in mind]
One Accusound clip-on mic could also provide a convenient solution for gaining the necessary control.

Reverb

In drier halls it may be desirable to add a small amount of reverb to the live violin, merely to achieve a good blend with the electronic sounds - (note that there is a special version of the Max Patch for dry halls as well). In normal sized concert halls with even an average reverberation, the addition of artificial reverb to the violin should not be necessary.

Click

Lightbox for violin (on stage) - with long cable running from the desk to the stage via DI box
Lightbox for the triggerist (positioned next to the mixing desk in the centre of the hall) - with short cable running from desk to lightbox
Lightbox inputs are 1/4" jack

MIDI keyboard

Only fifteen notes are used (Eb3 - F4), and so a small 4 or 5 octave keyboard will provide more than enough range. However due to the fact that the keyboard is in the centre of the audience, and that much of the piece is rather quiet, there is an advantage in using a keyboard with weighted keys which provide a much quieter and more secure action. **A sustain pedal** can be used in order to stop the sound-files during rehearsal - if a file is playing, just depress the pedal and the file, together with any click-track that is playing, will stop immediately. If a sustain pedal is not available, this function can be controlled at the computer with the mouse.

*Max MSP - the Patch is available as a Collective, i.e. which launches a Play-only (non-editable) version of the software, in cases where the computer is not equipped with Max MSP. For full instructions about all versions of the Patch, refer to the READ-ME included on the CD-ROM.

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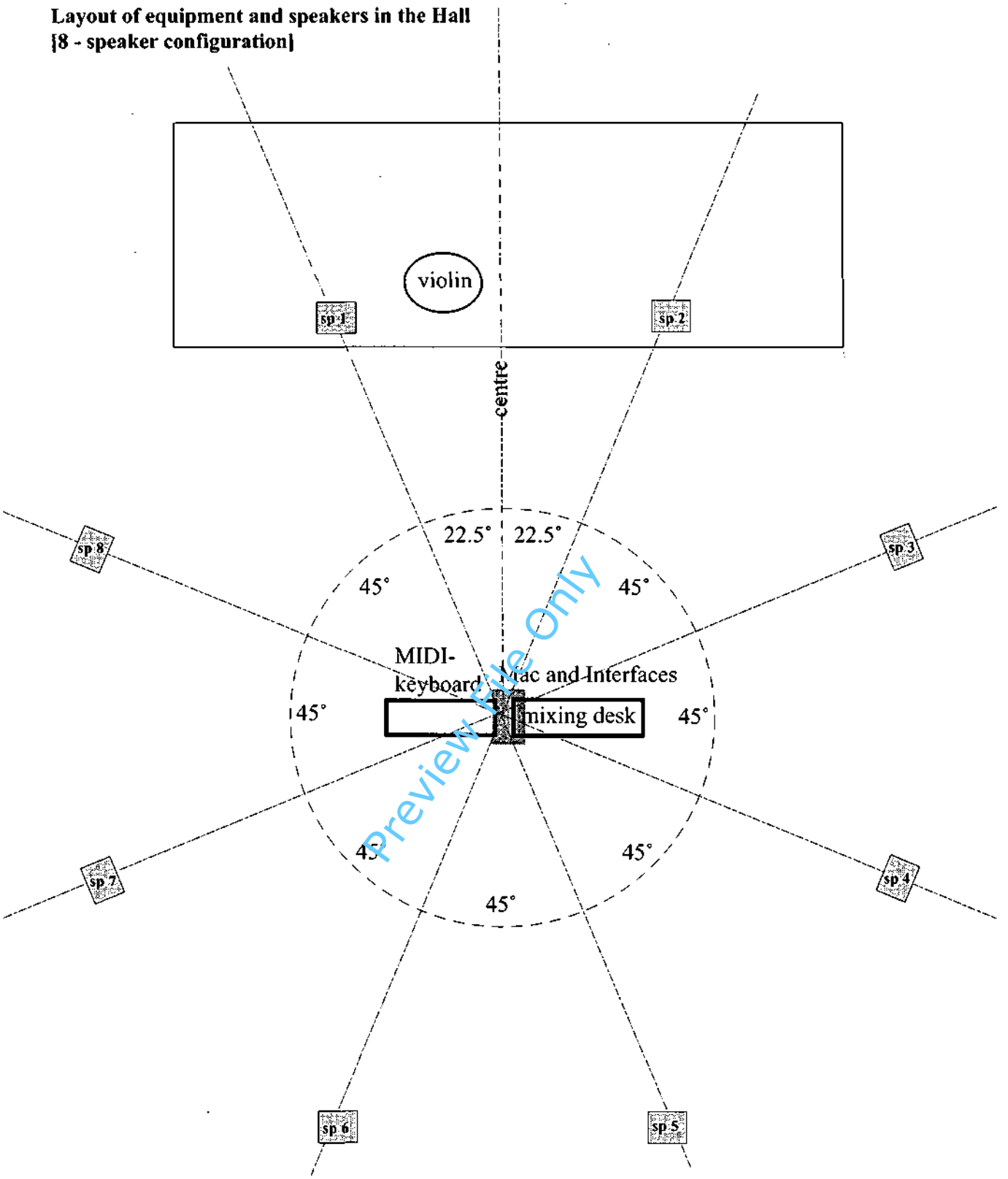
Layout of equipment and speakers in the Hall
[8 - speaker configuration]



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Ideal layout of speakers in the hall.
If possible speakers 1 and 2 should be flown above the stage (about 2.5 - 3m above the stage)
Alternatively tall speaker stands can be used to achieve a similar height.
The angles from the centre are important in order to achieve the correct spatialisation.
When the length of the hall is greater than the width (as is usually the case) speakers 1, 2, 5 and 6 can be moved further away from the central point, but should be moved along the appropriate axis in order to keep the correct angles from the centre. If the distance is significant, the other speakers should be delayed by an appropriate amount.

Programme Note

Haunted by Verlaine's famous lines *"Les sanglots longs Des violons De l'automne..."*
Autumn Voices concerns the extraordinary colour-spectral transformation of the autumn leaf-change.

This process is mirrored in musical terms by a gradually evolving harmonic field based on the spectra of the violin's four open strings. This harmonic field starts from a simple combination of twenty harmonics (the first five partials of each string) and very gradually fans out to form a rich palette of eighty harmonics (the first twenty partials of each string). At certain points during this process the fundamentals of the four spectra are shifted downward in steps of a perfect fifth, further emphasising the gradual increase in natural resonance between the violin and its electronic counterpart, and causing an inevitable timbral transformation as the violin is gradually forced to expand its initial field of twenty natural harmonics to include artificial harmonics and normal stopped notes.

The songs of many birds are mingled with Verlaine's *'sanglots'* to articulate this constantly enriching spectrum, but as the theoretical point of maximum coloration approaches, the leaves are cruelly blown away leaving the bare woods to resonate only the sounds of dead branches and the creatures of winter.

Autumn Voices was written for Mieko Kanno, and is dedicated to her.

James Wood (May 2001)

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to Mieko Kanno

Autumn Voices

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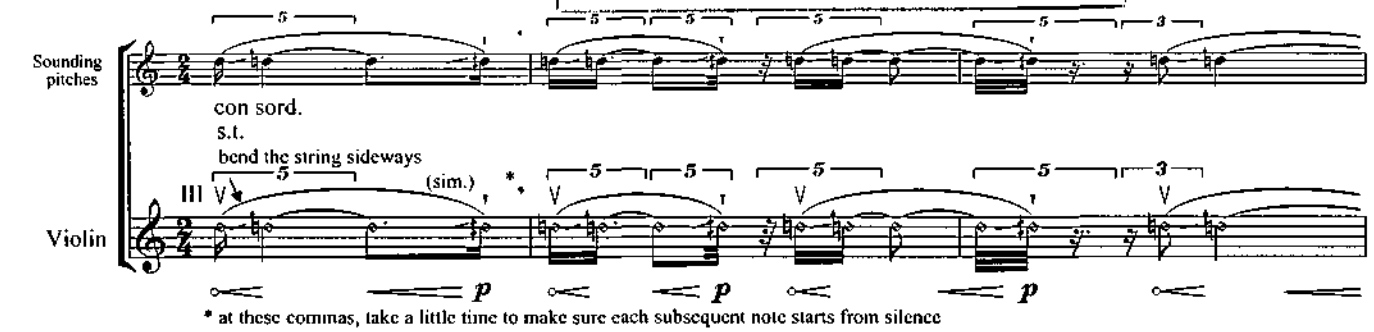
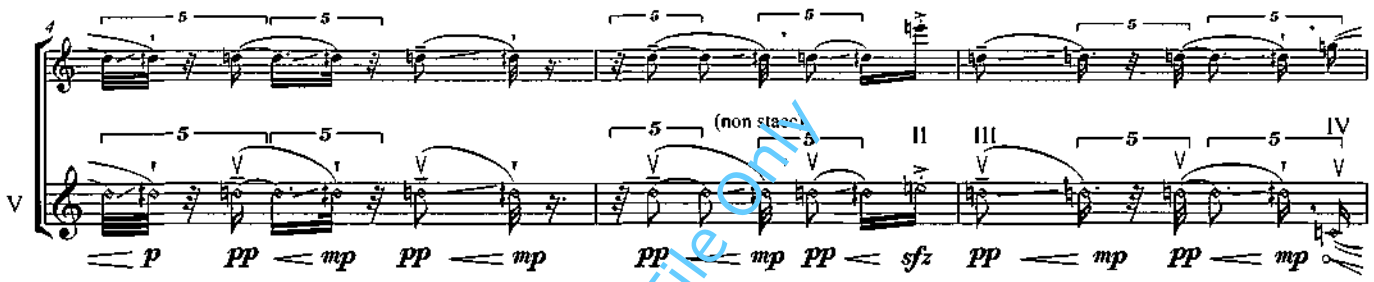
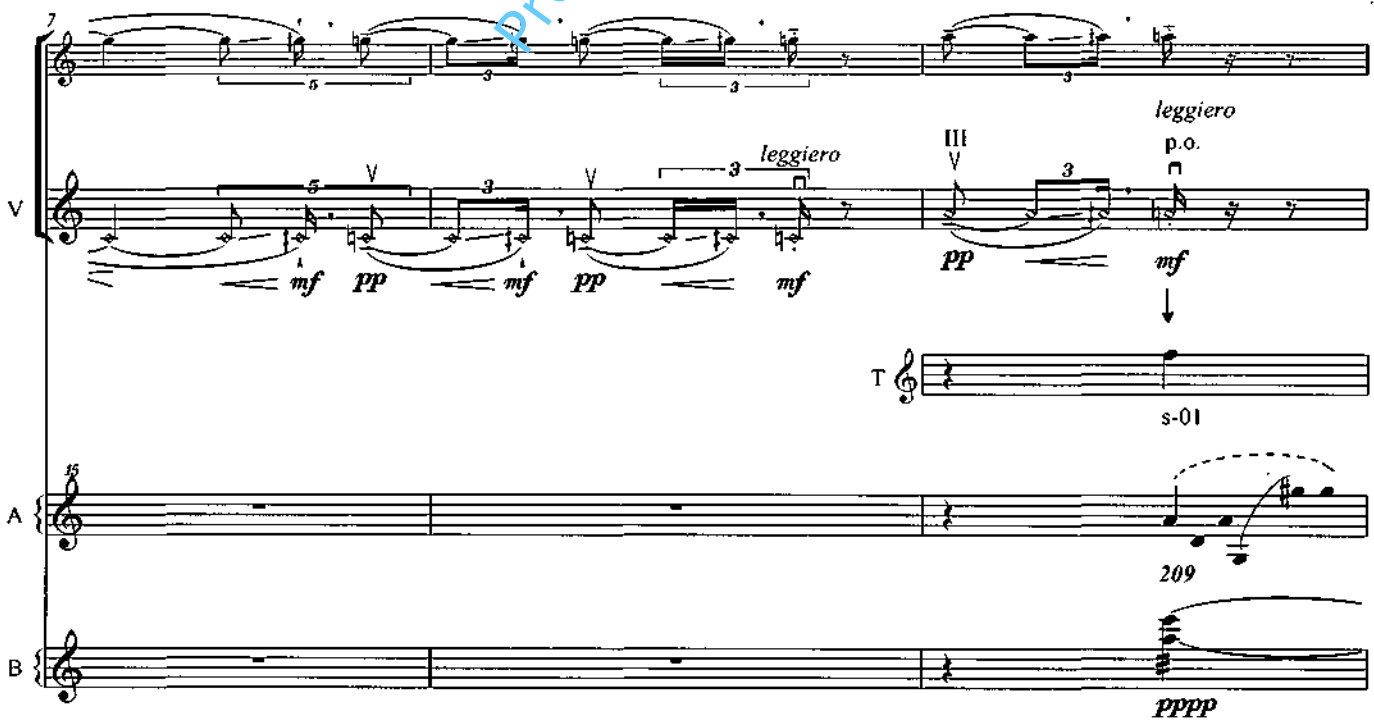
Tempo flessibile (♩ = c. 56)

James Wood







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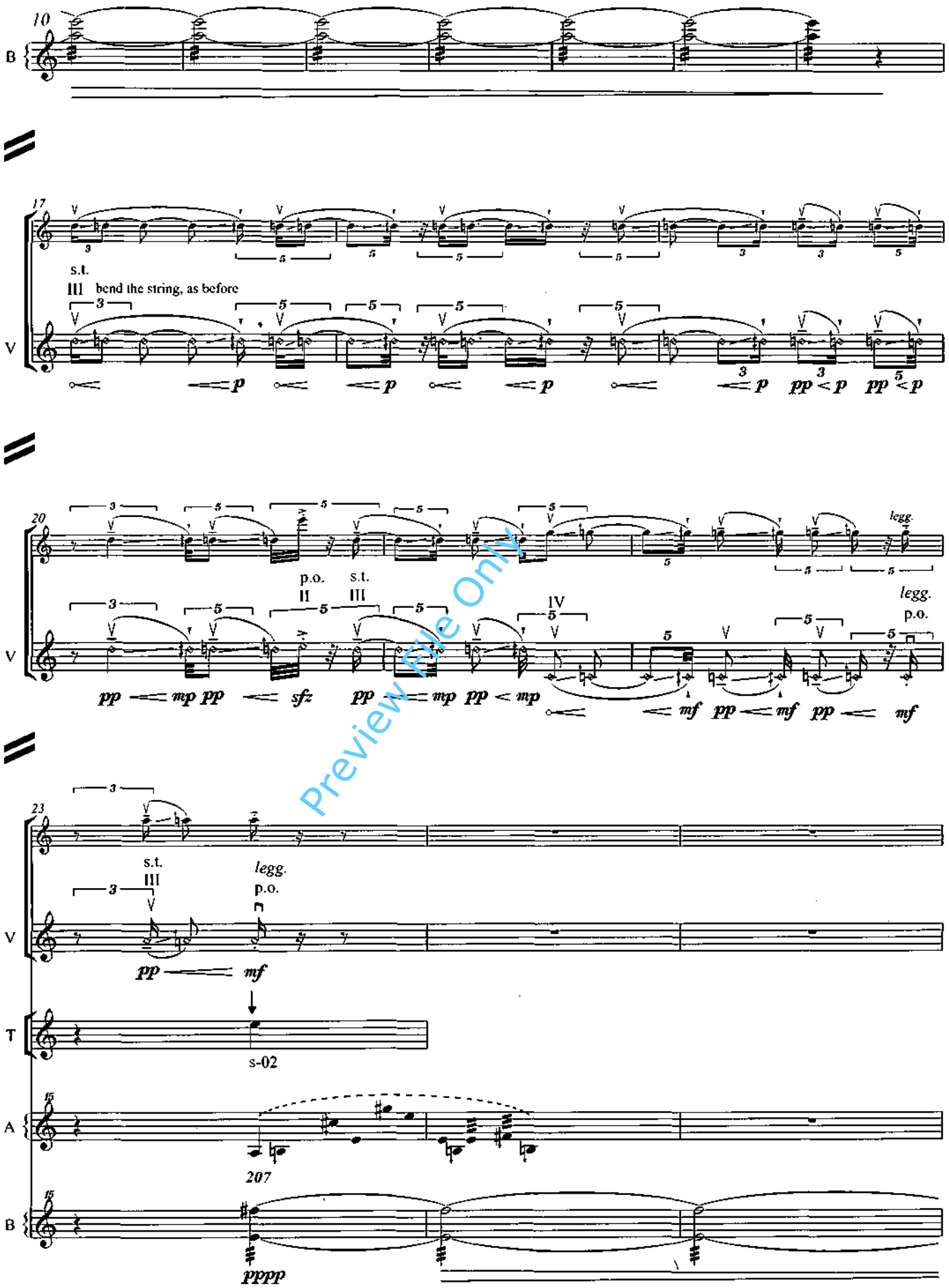

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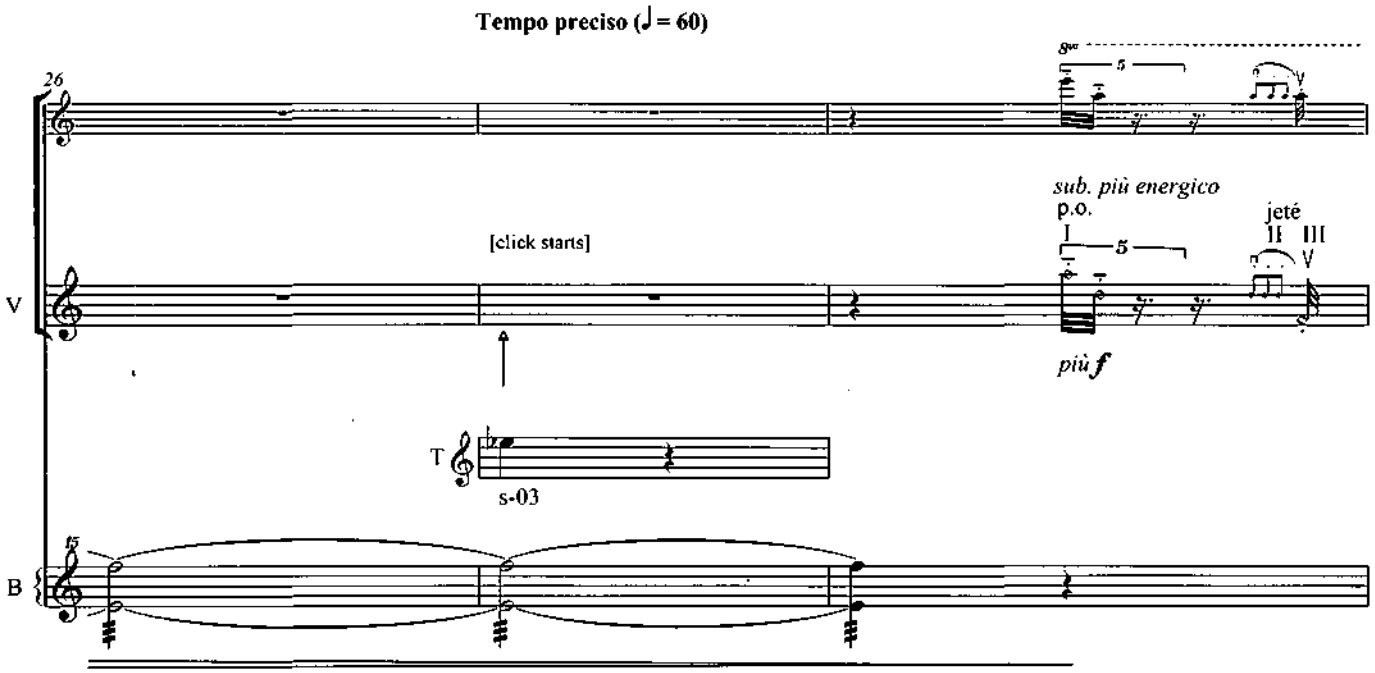

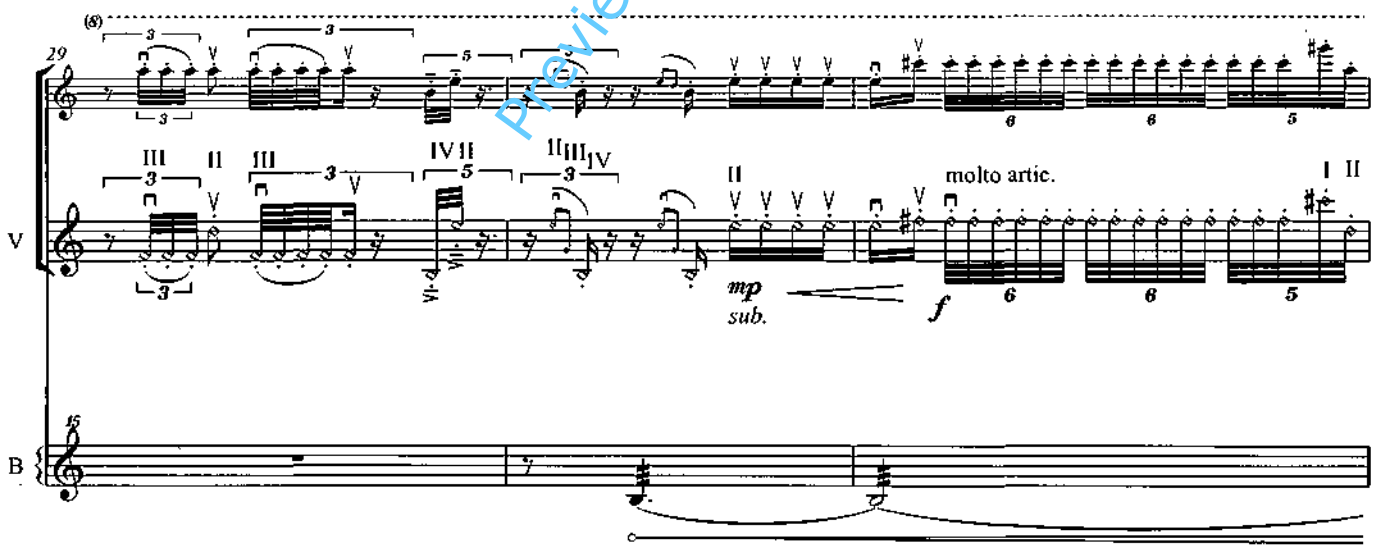

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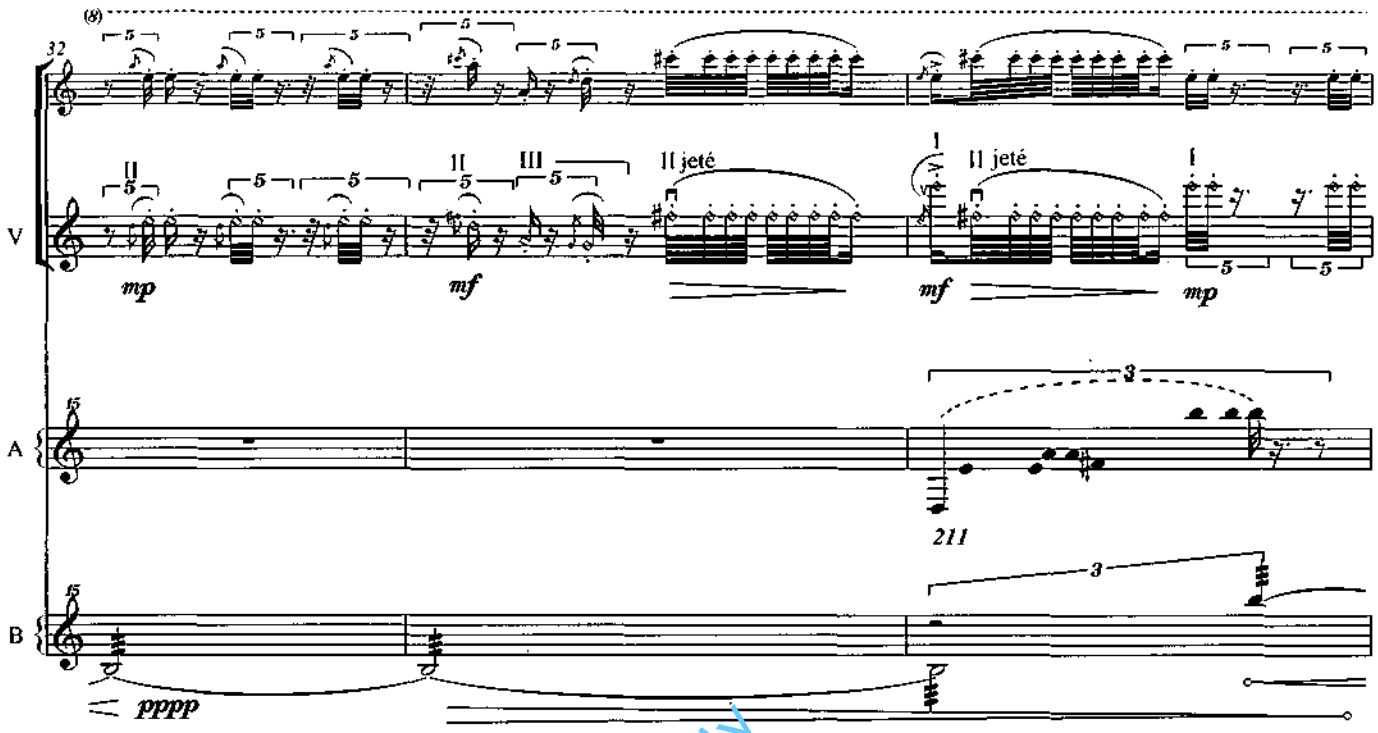

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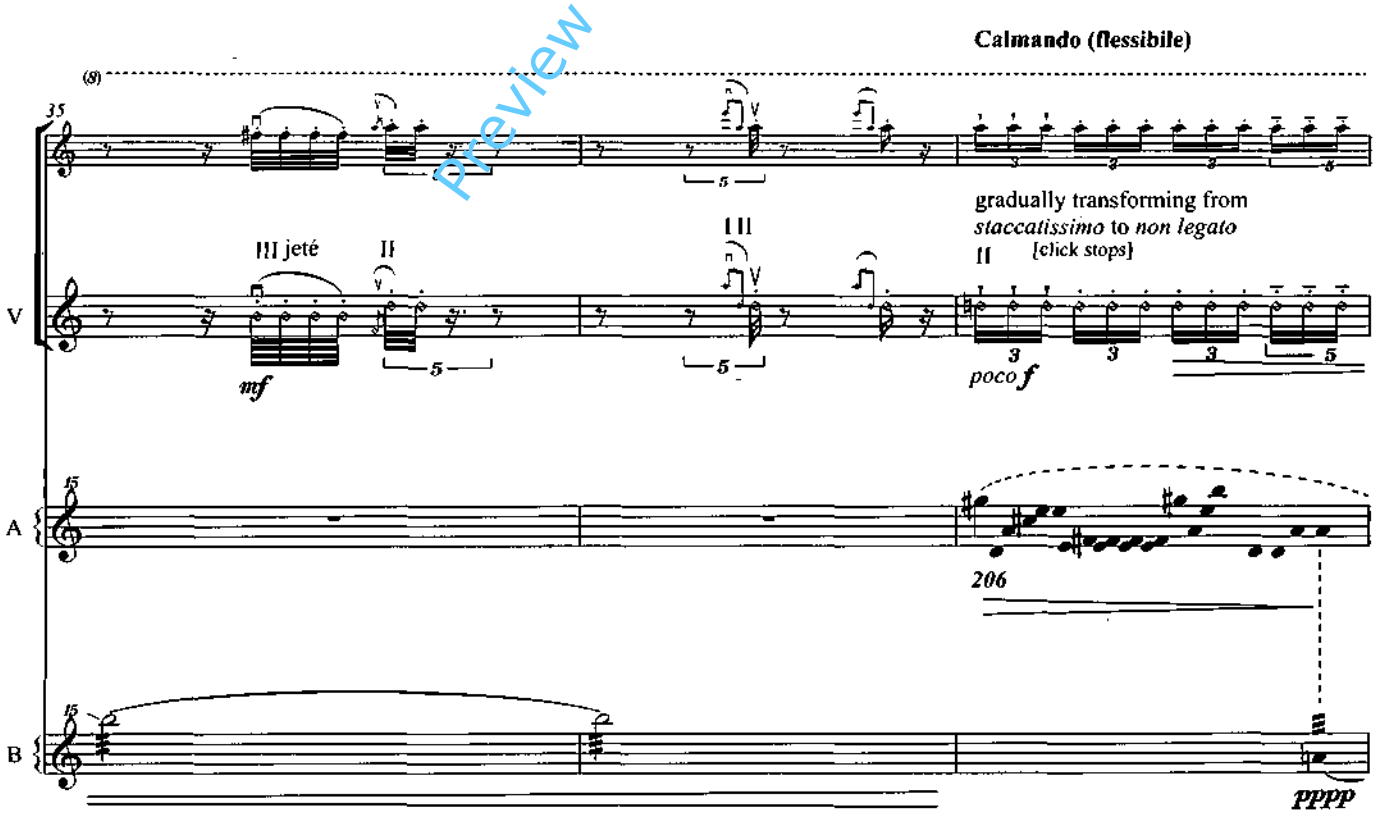

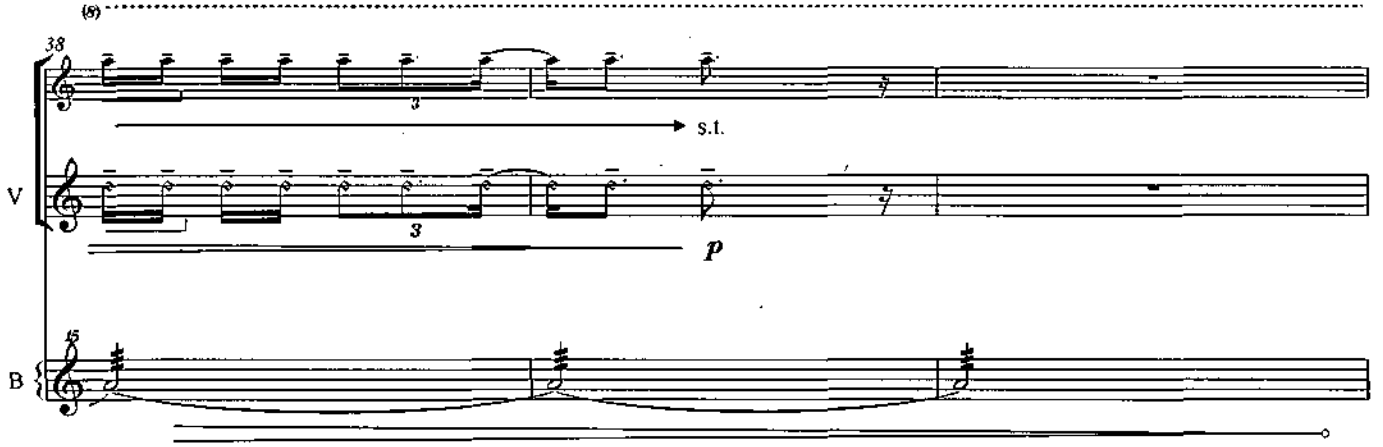

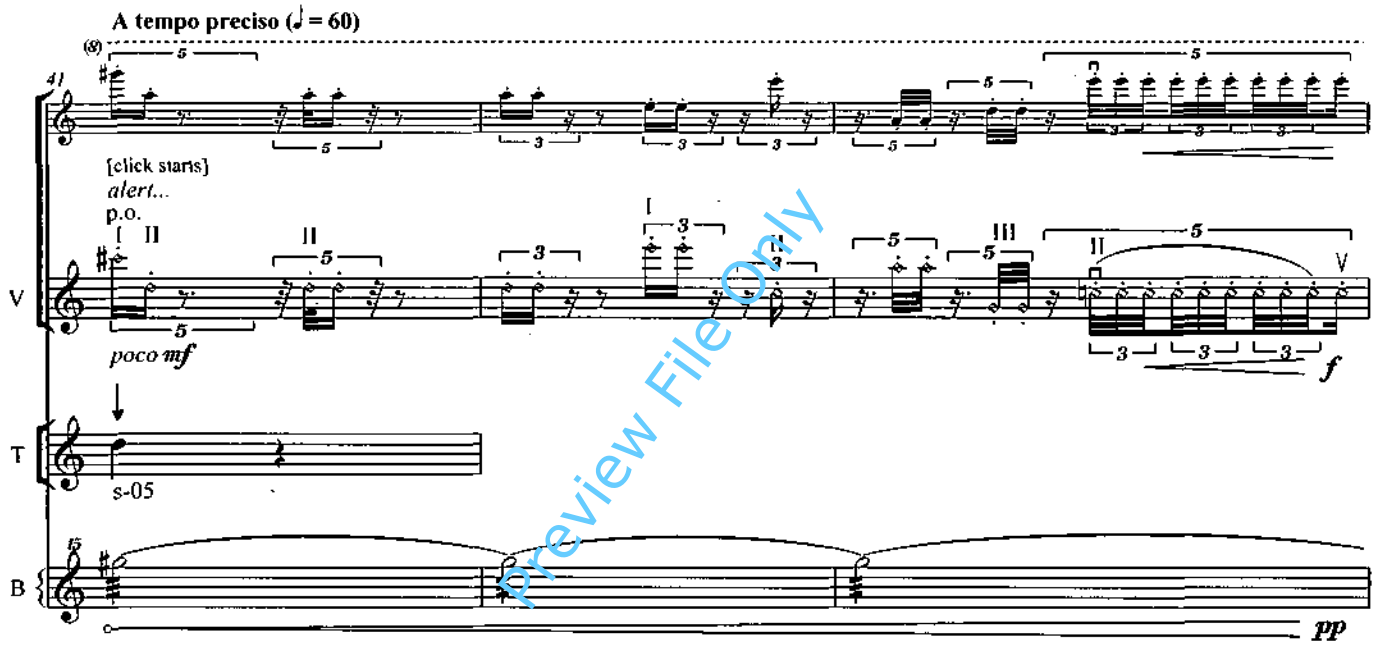

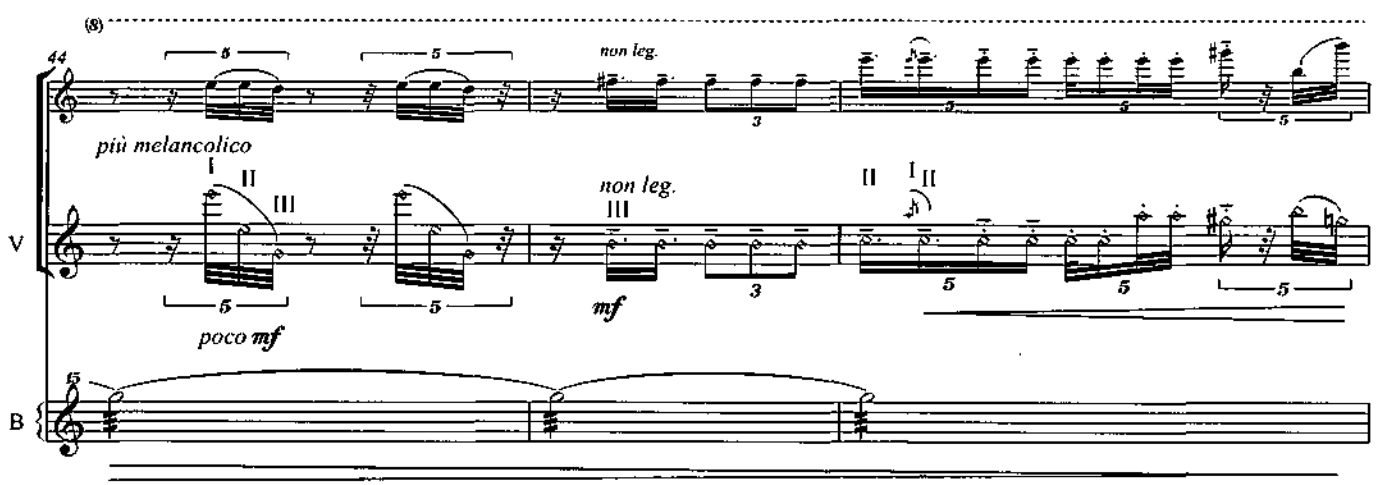

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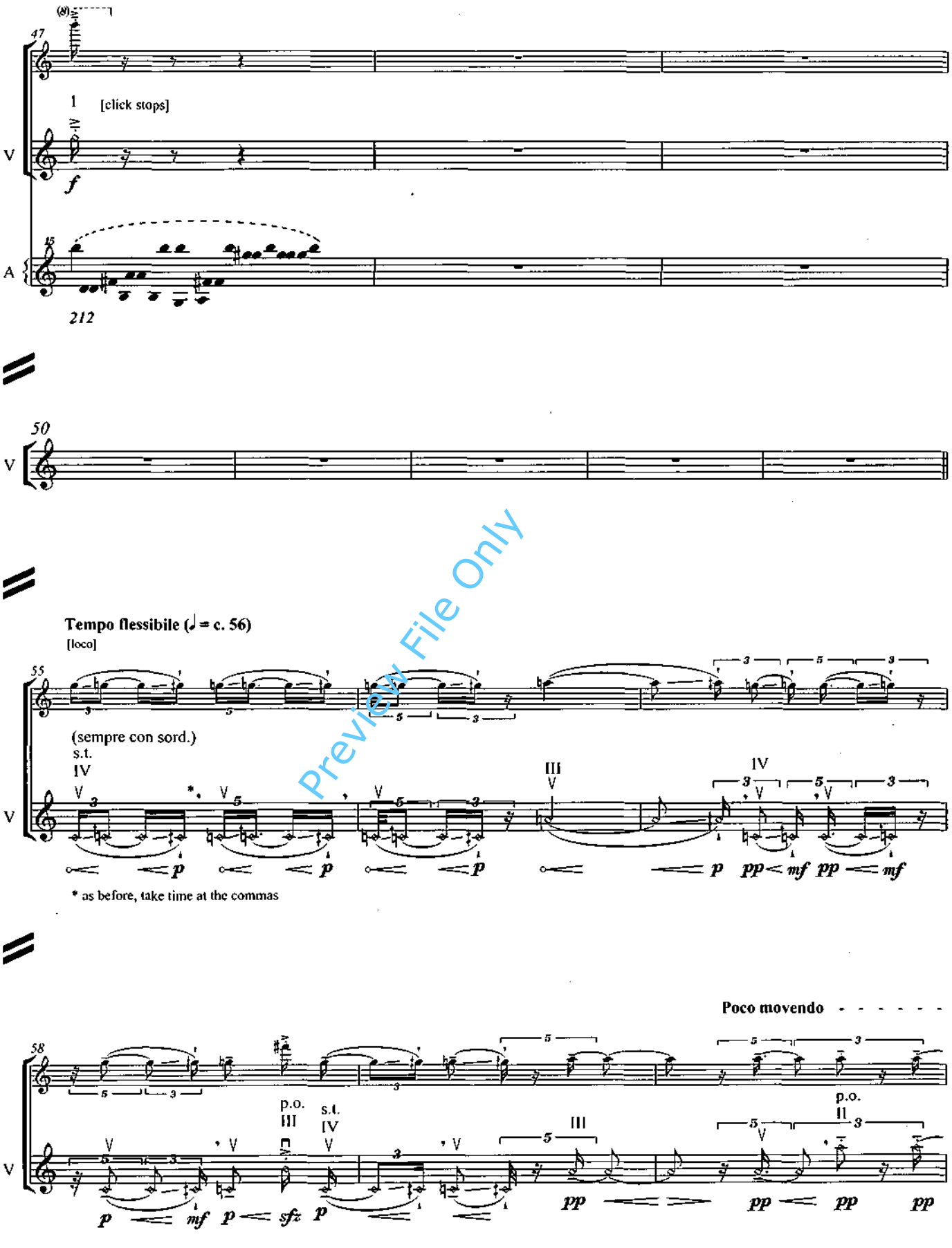

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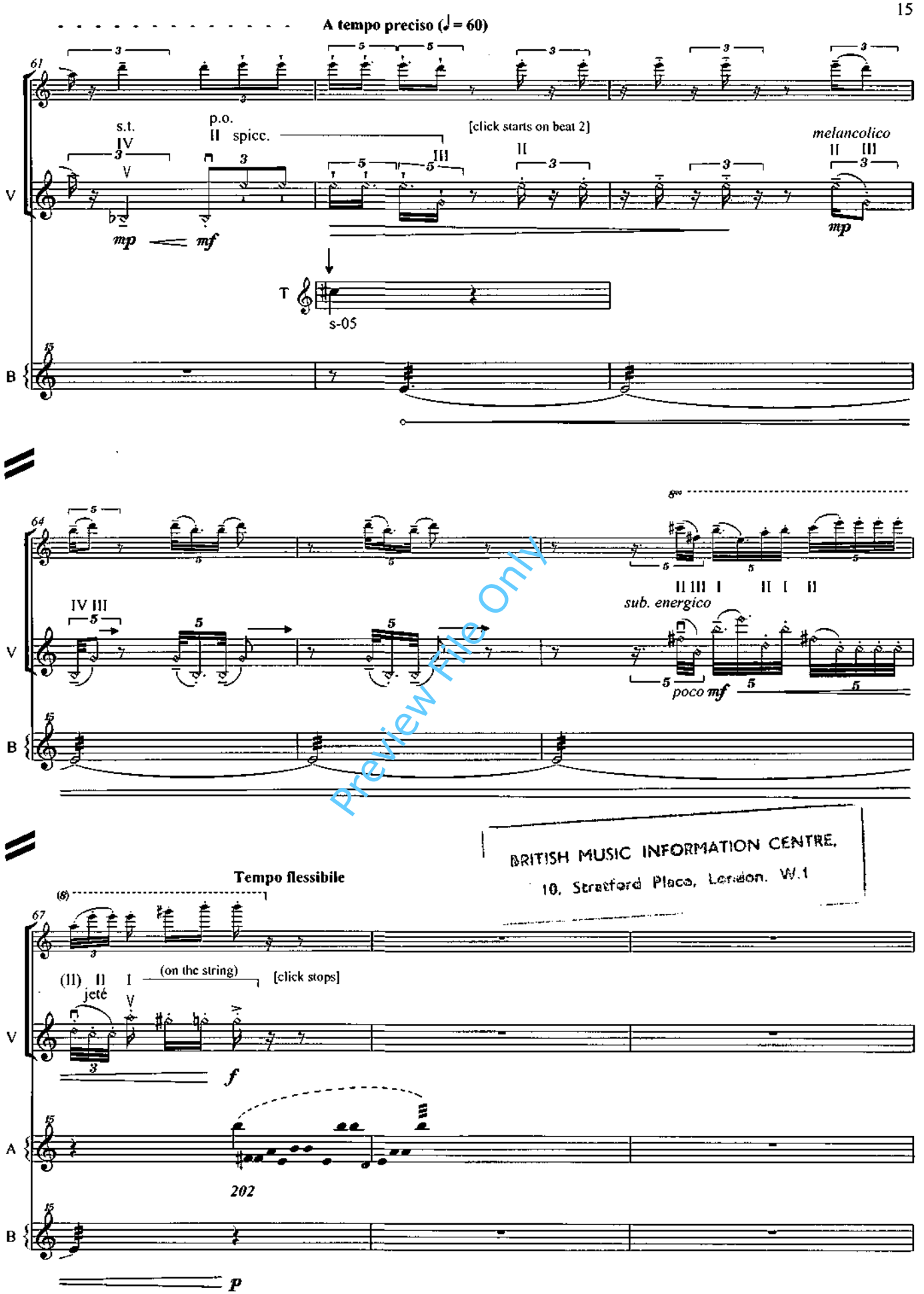

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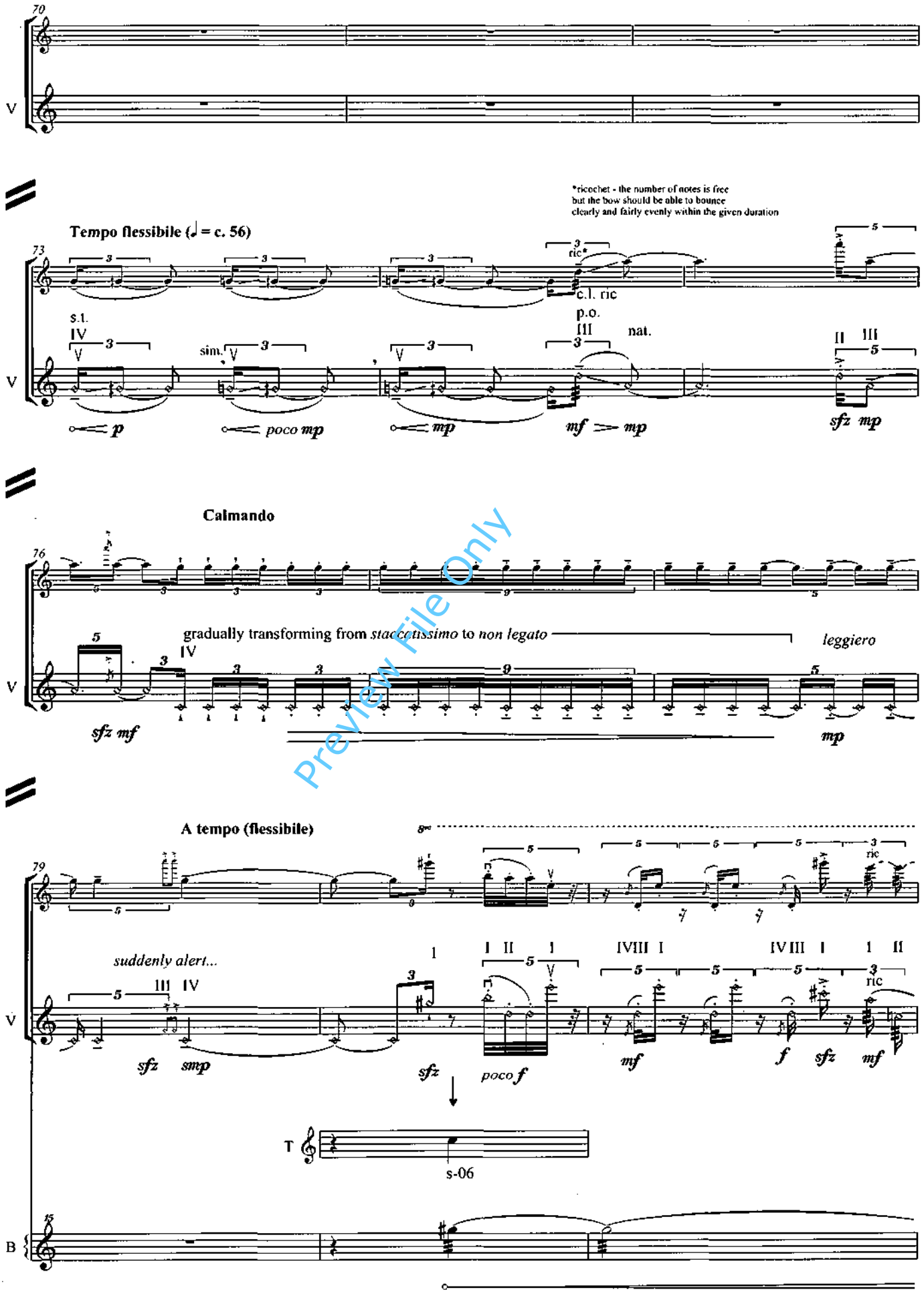

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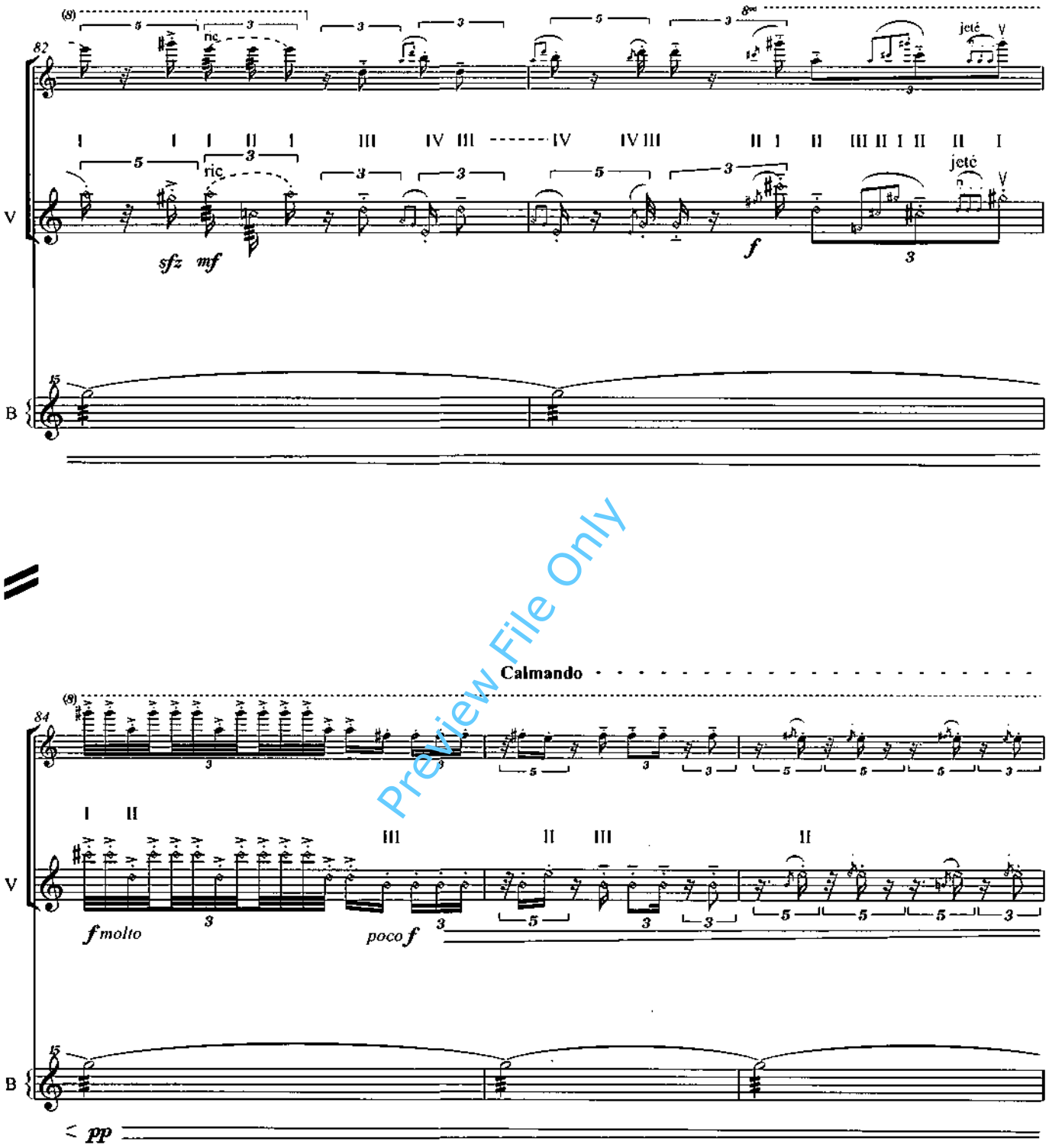

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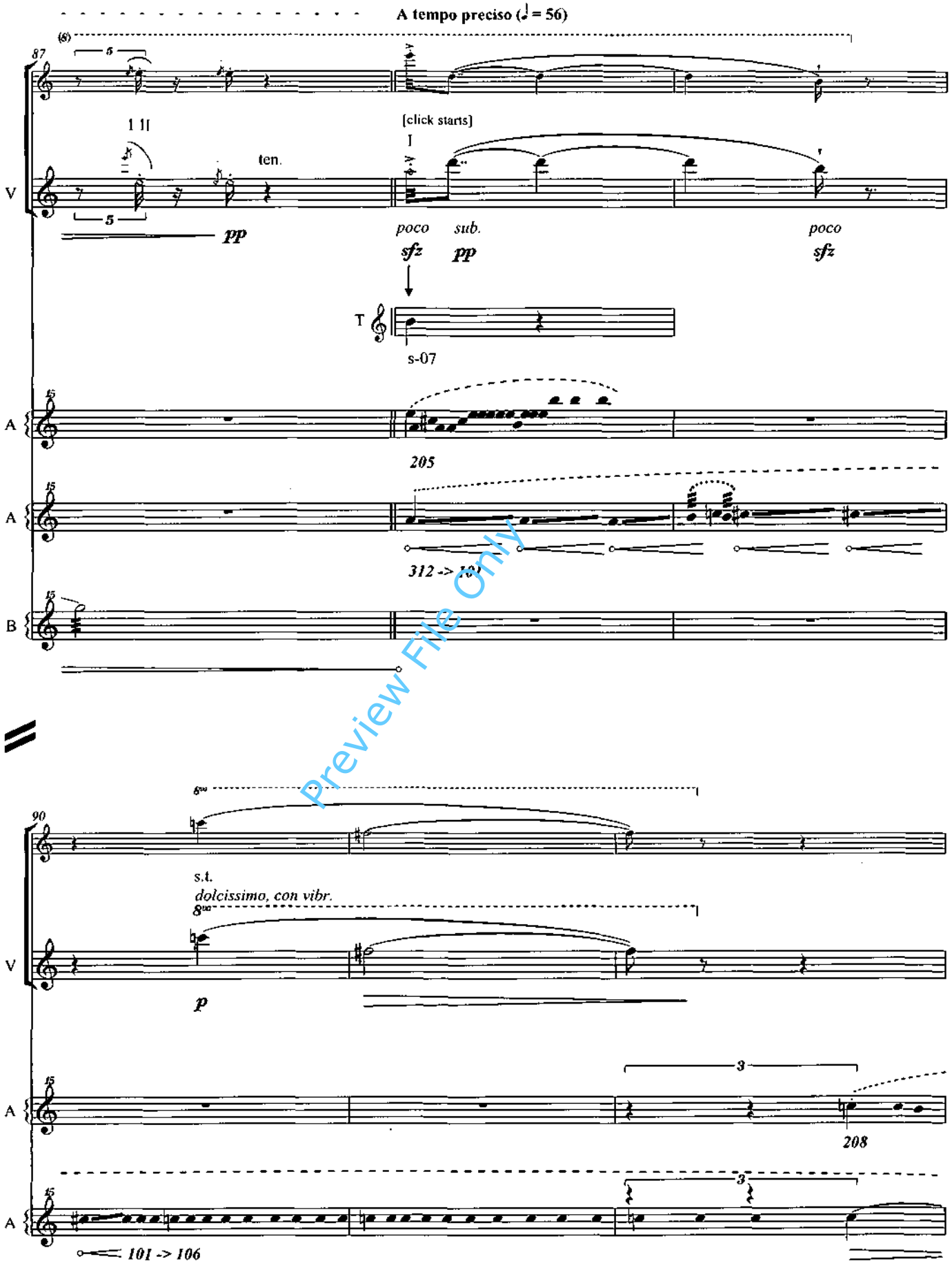

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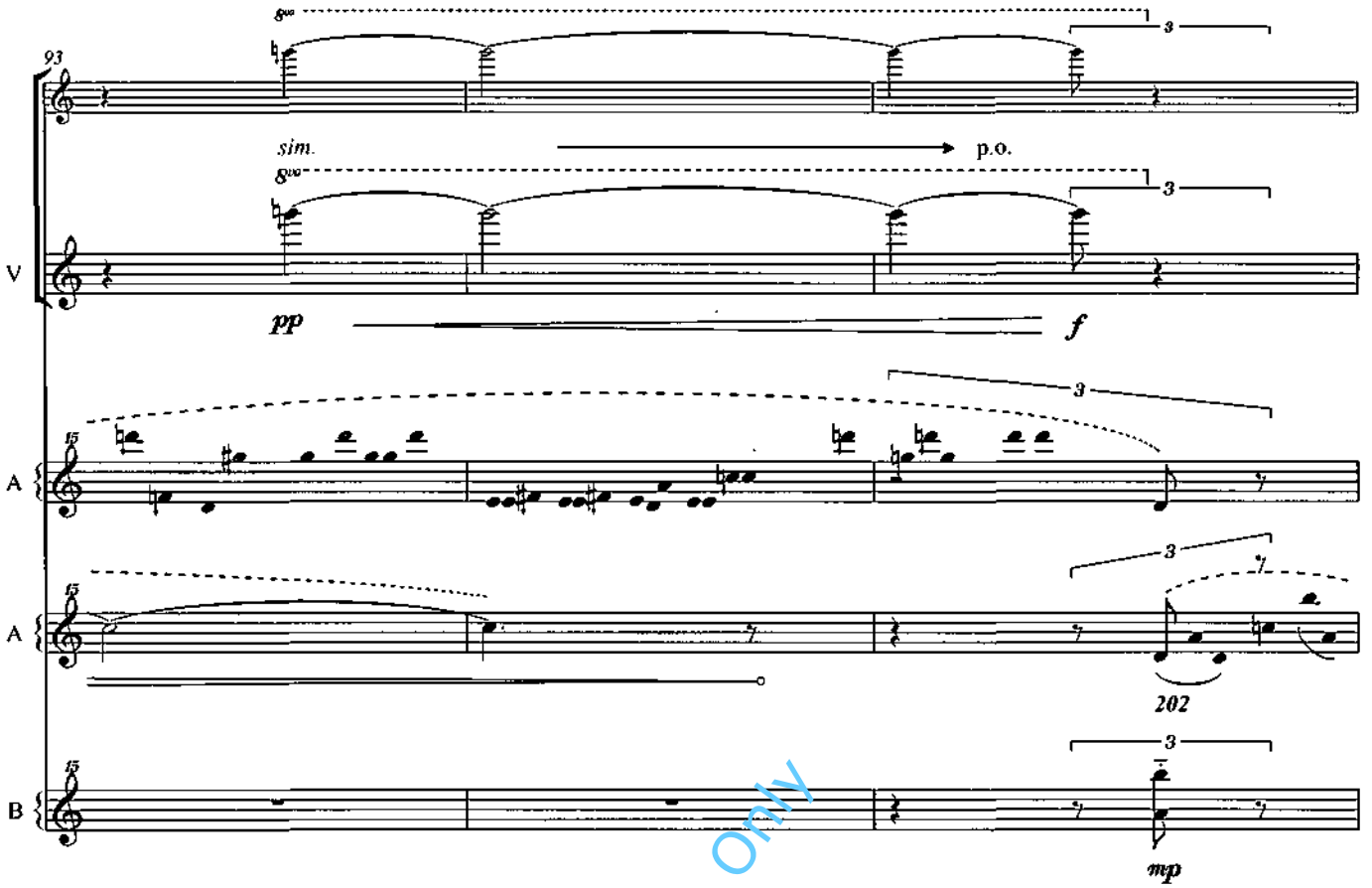

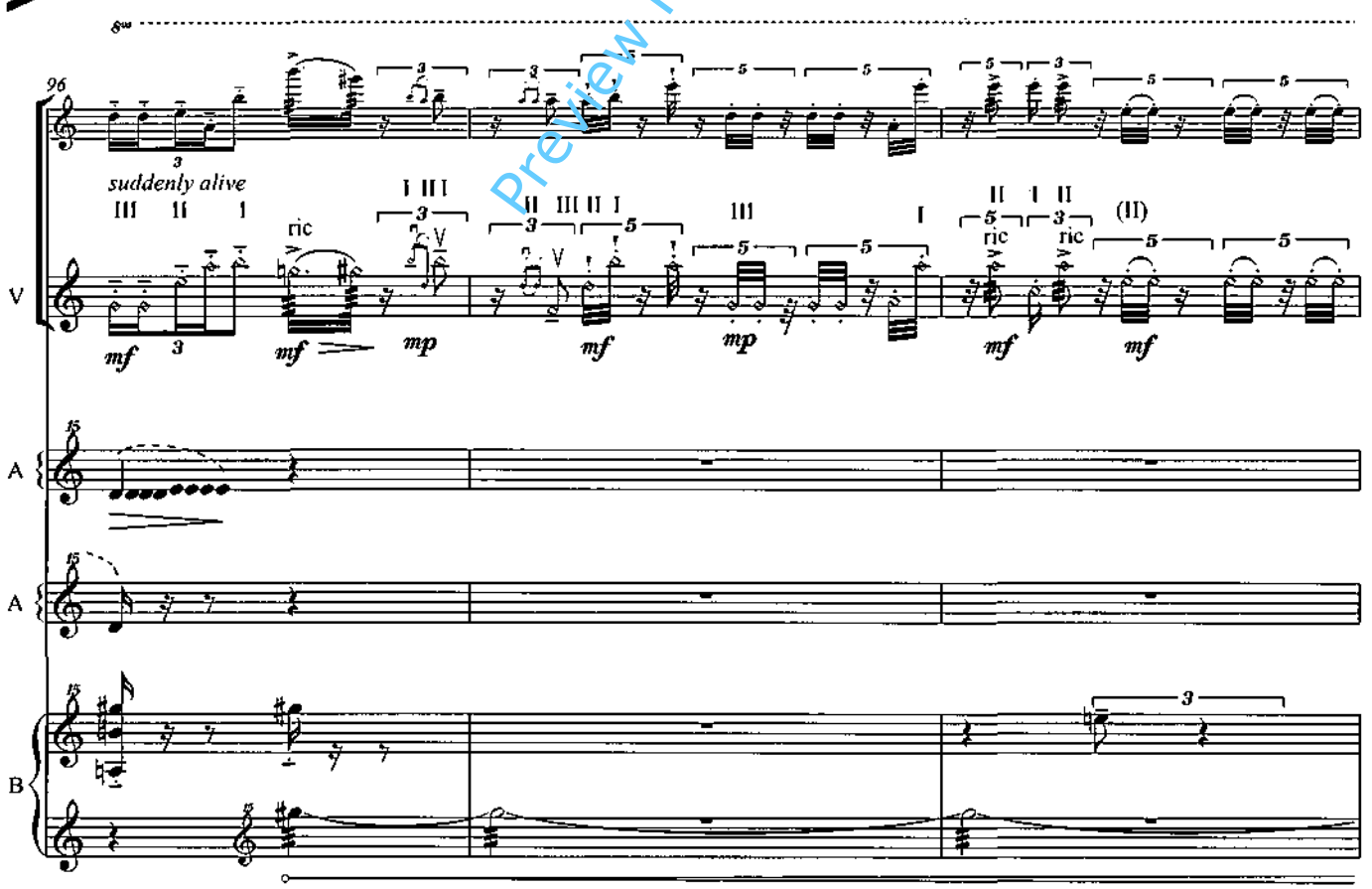

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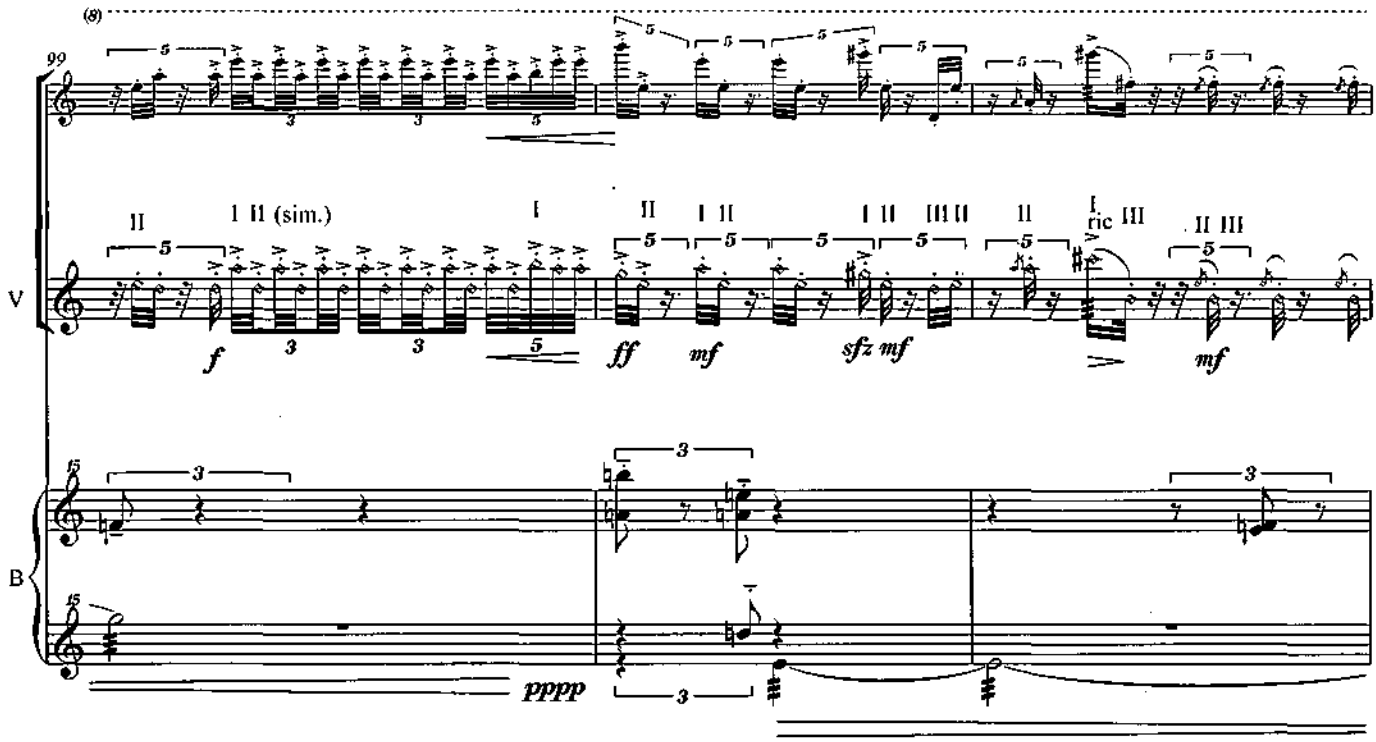

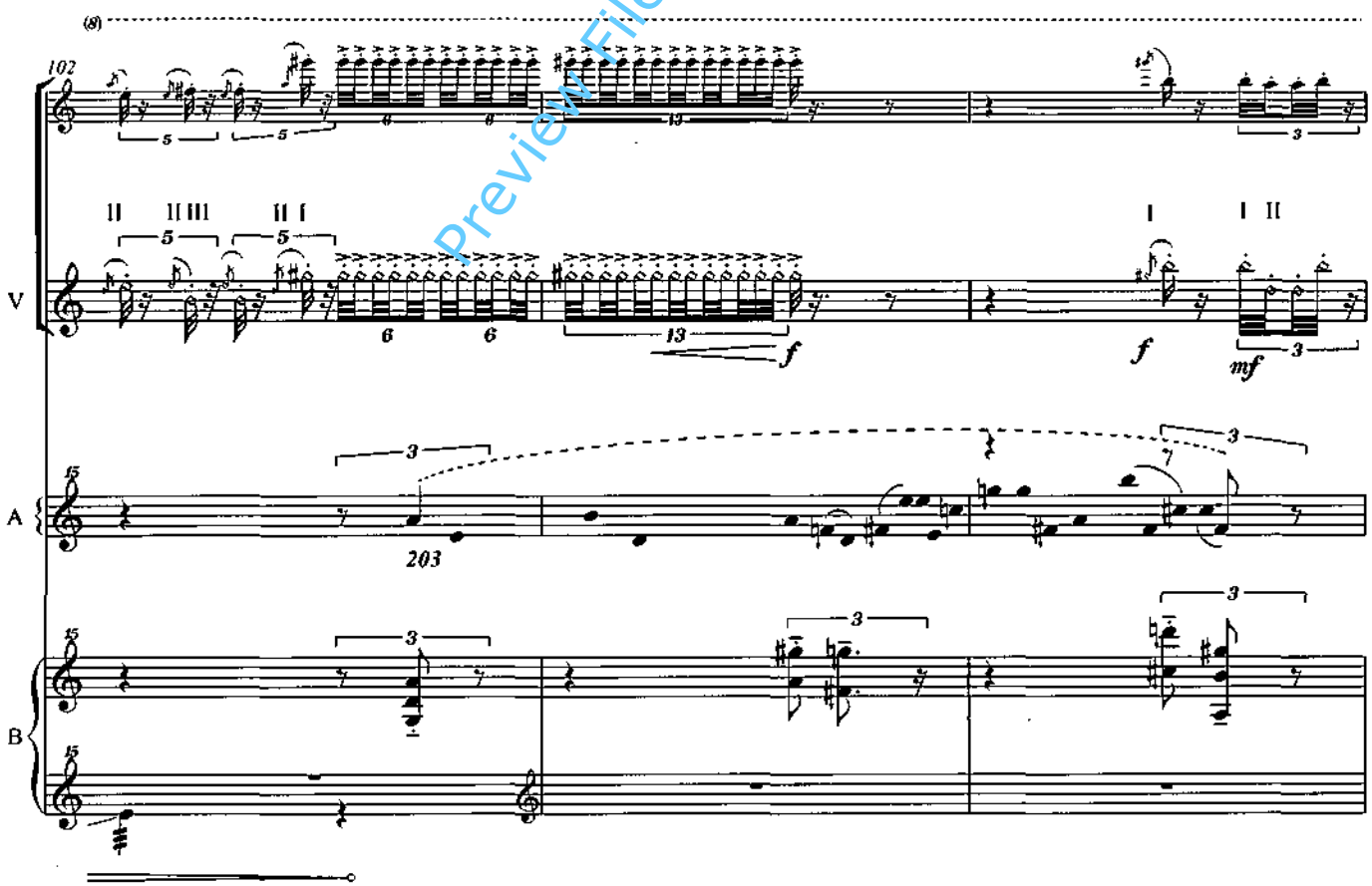

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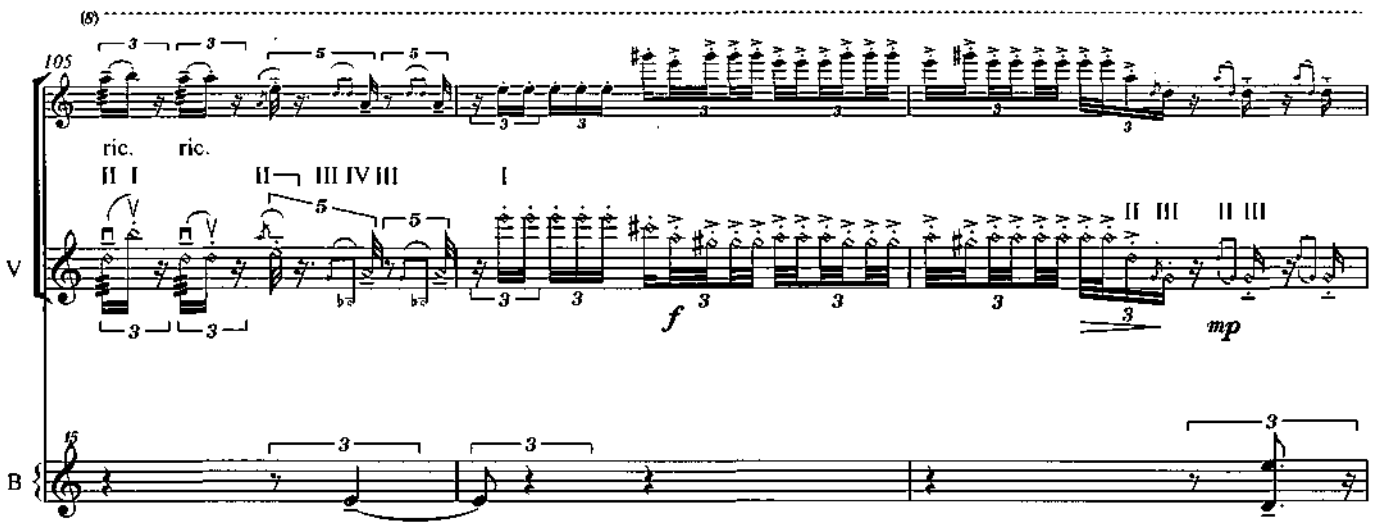

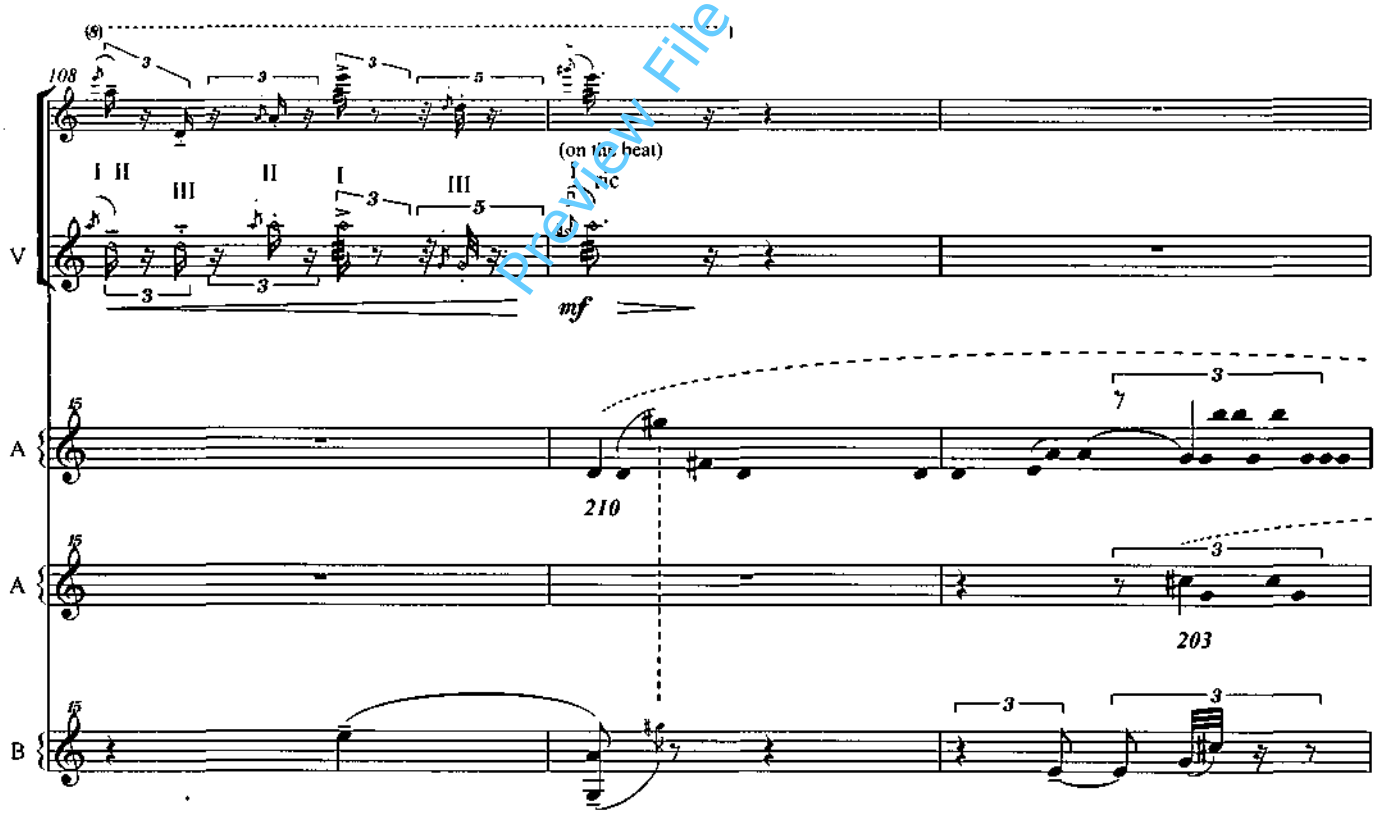

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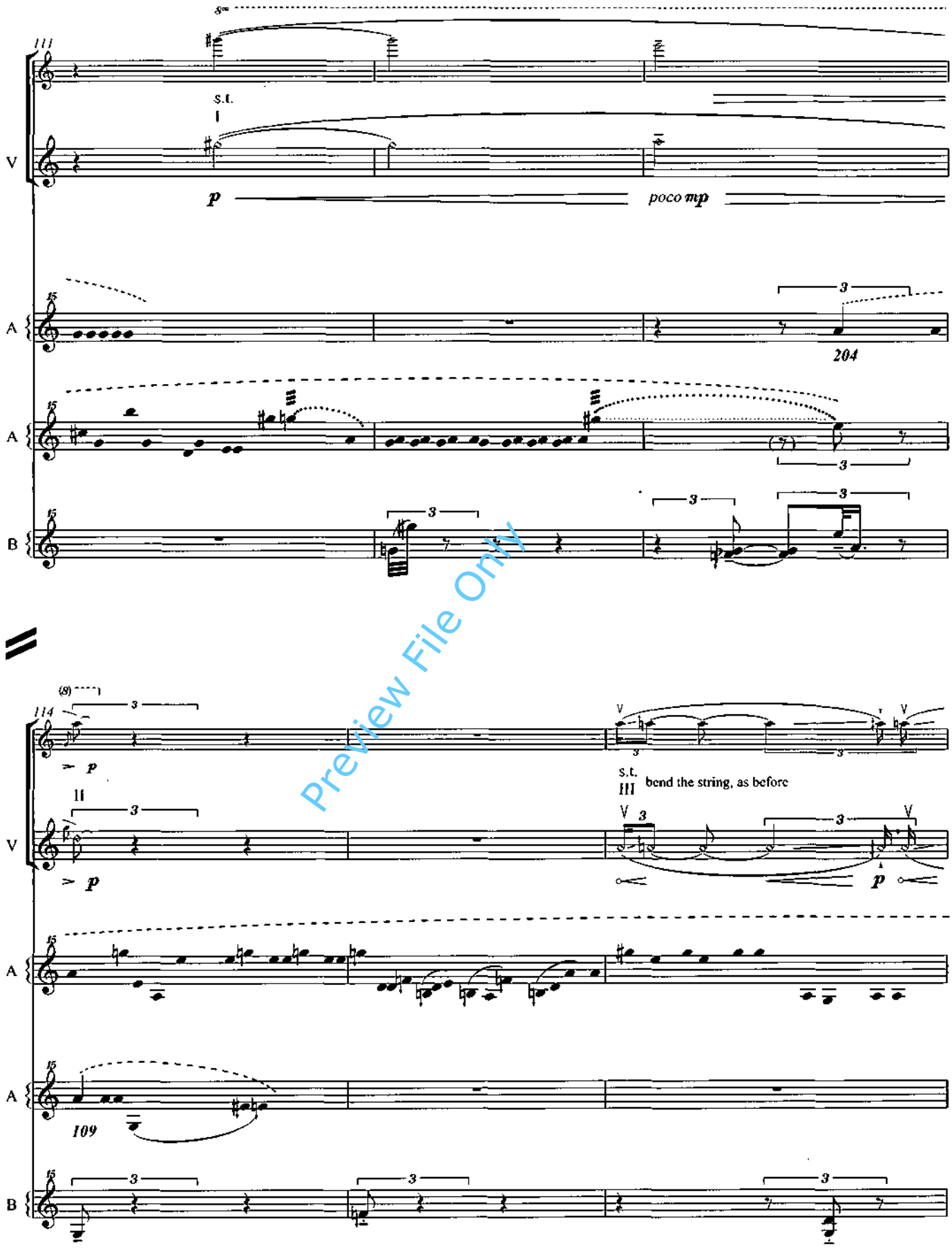

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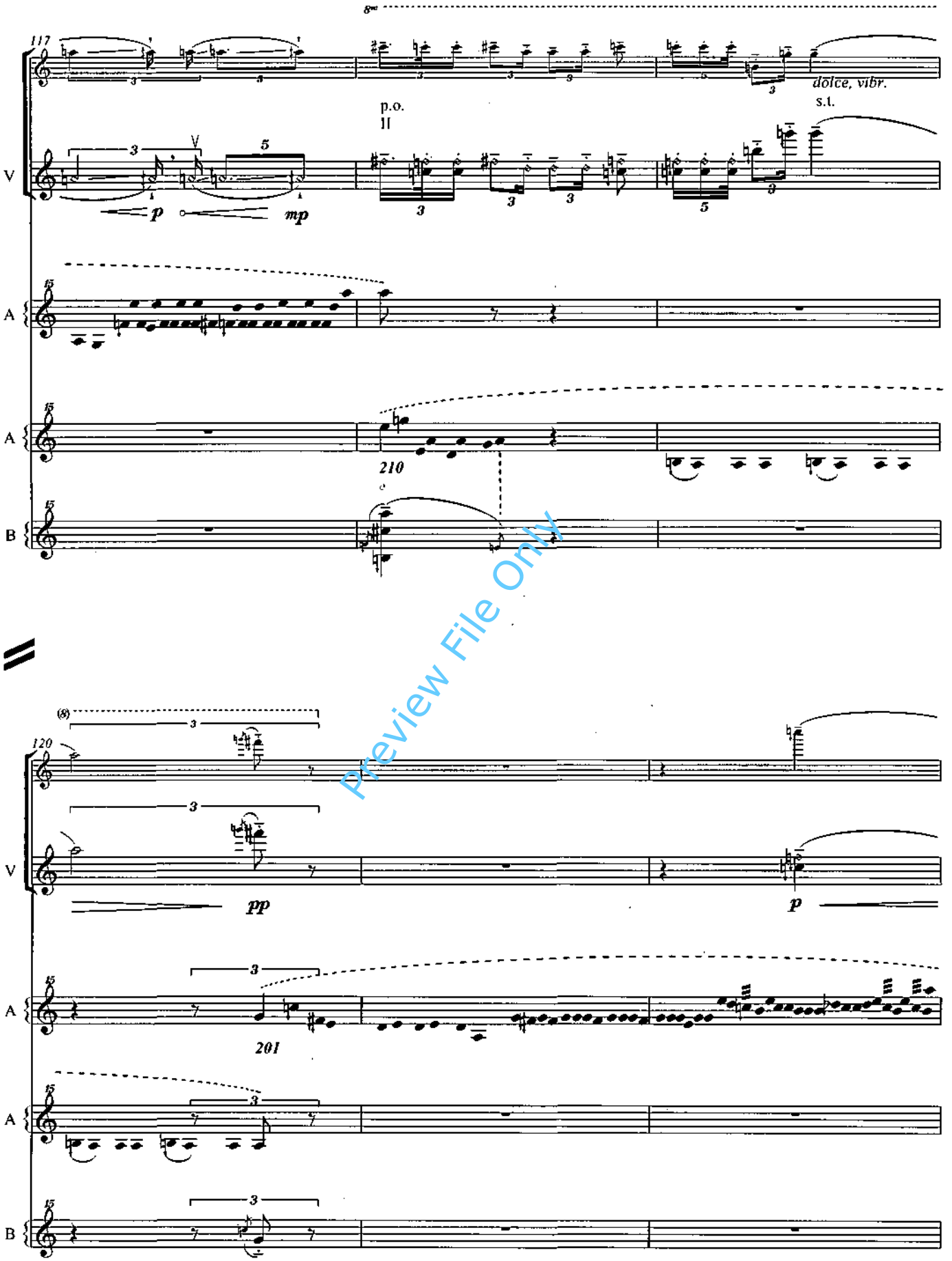

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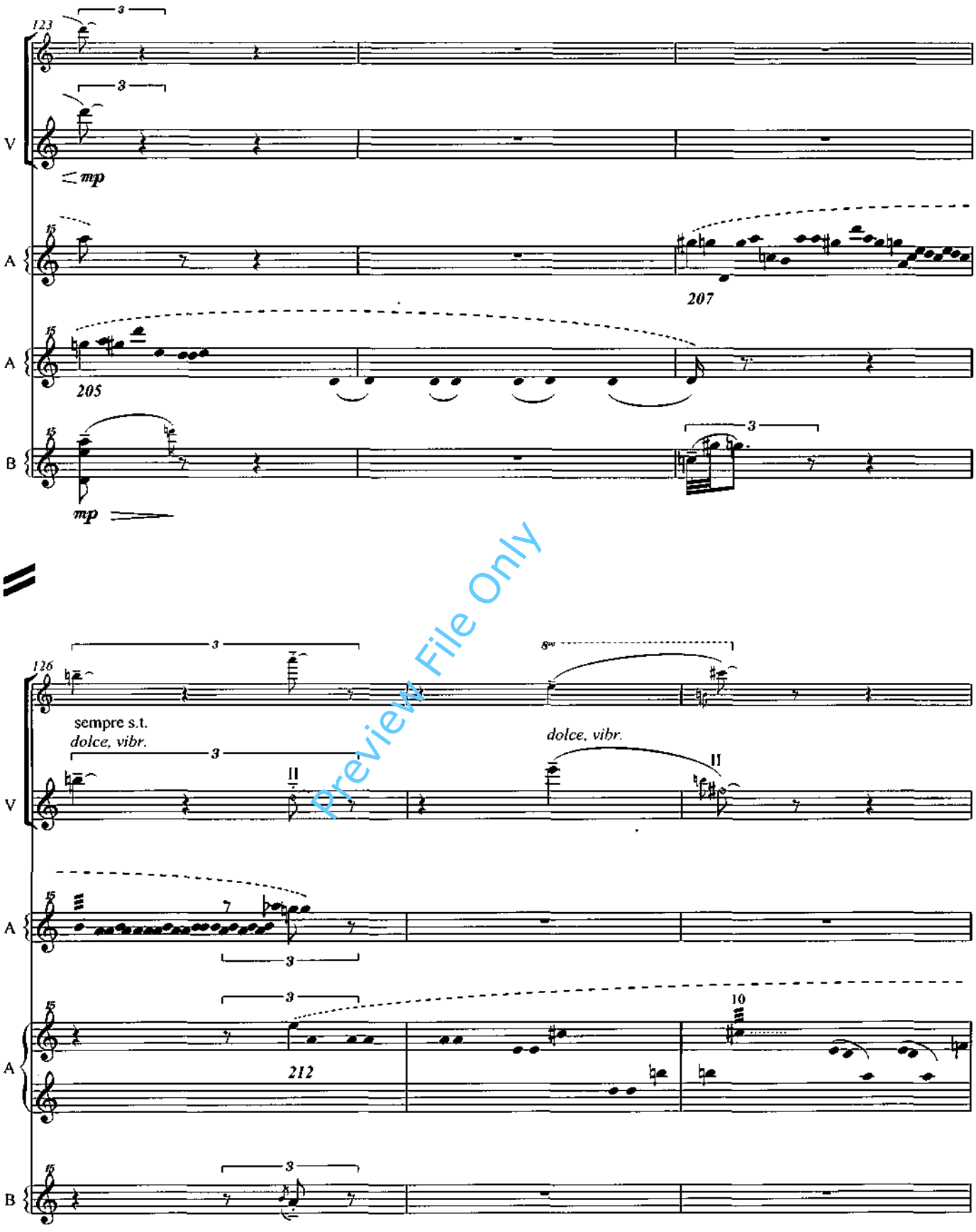

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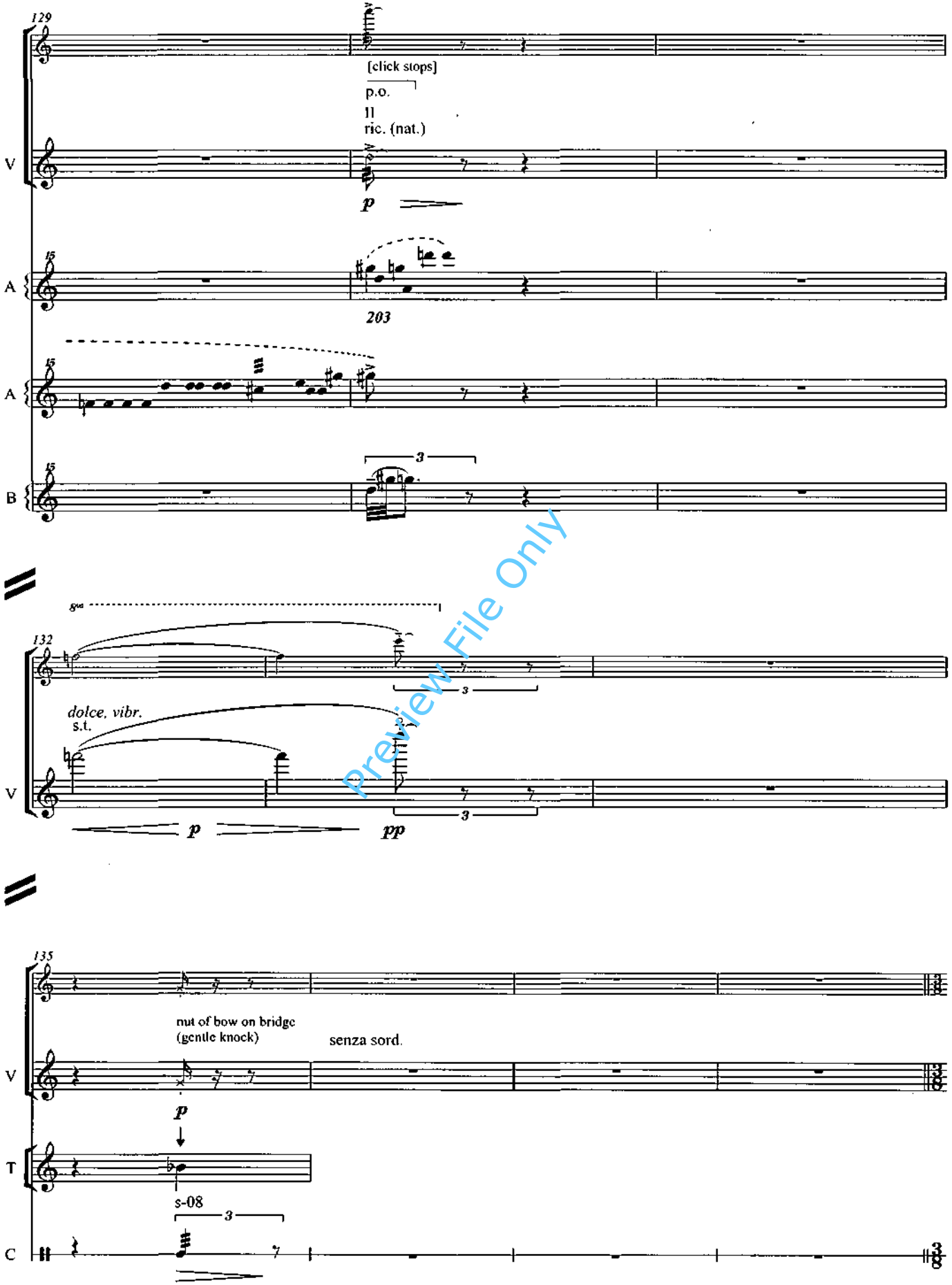

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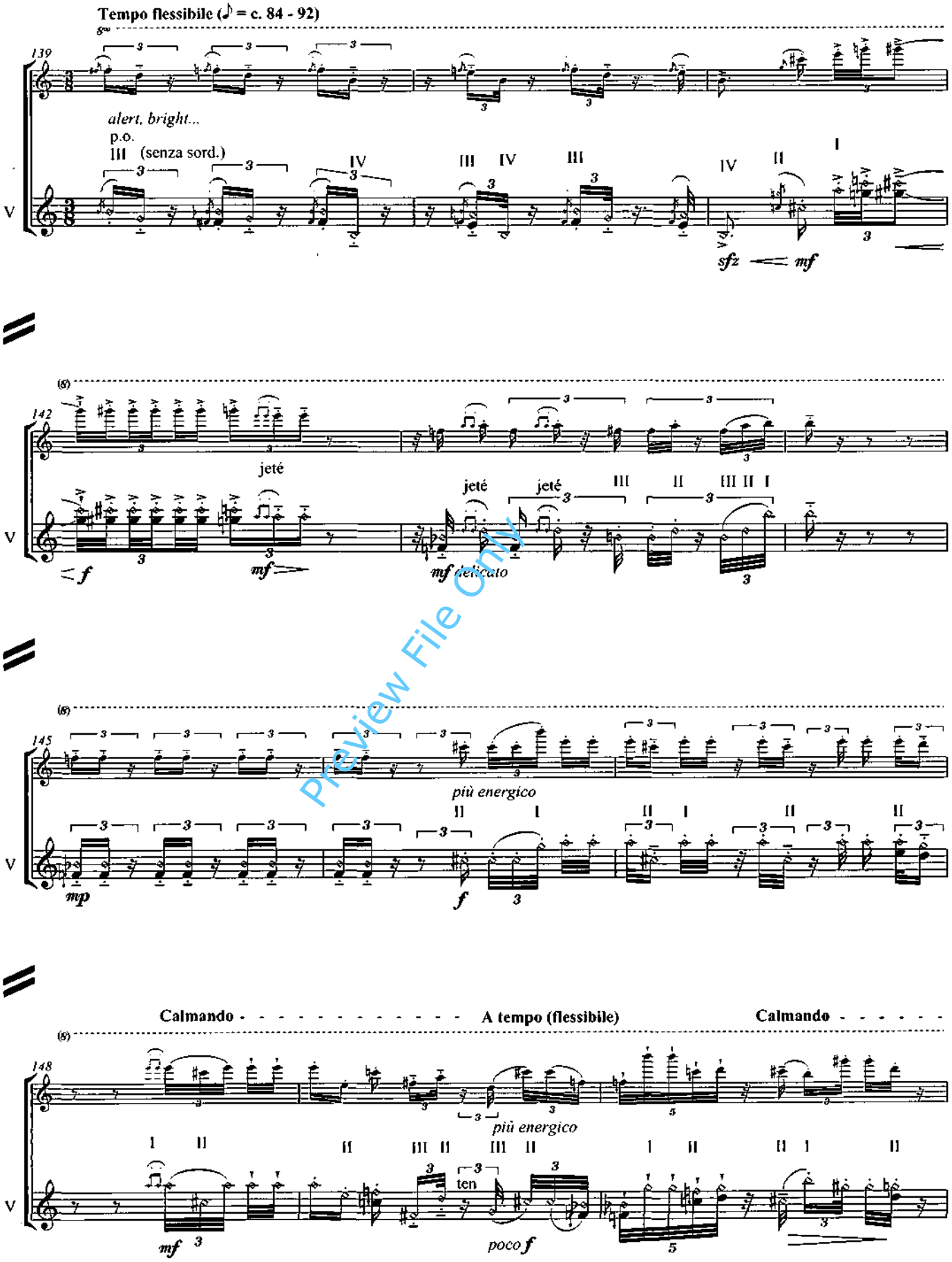

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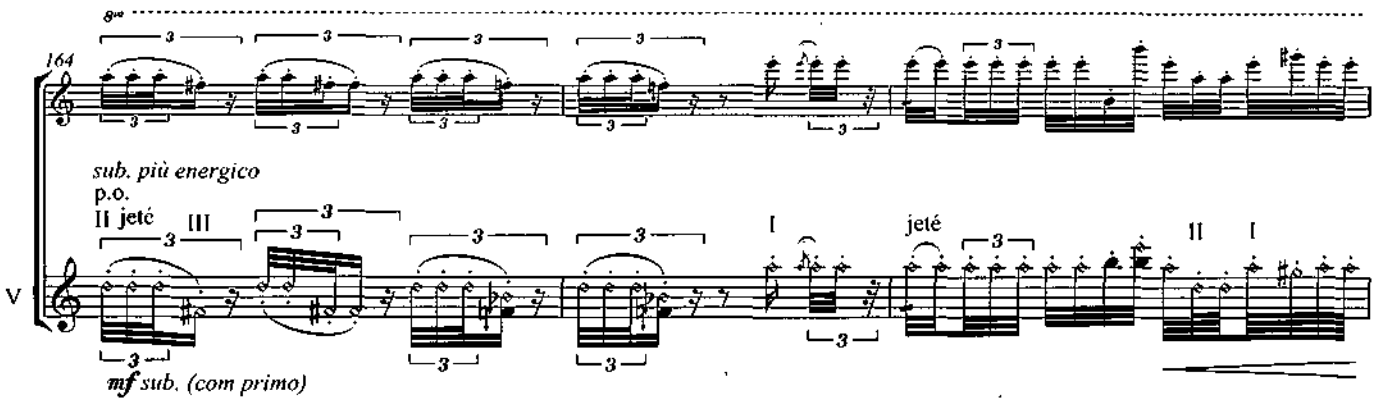

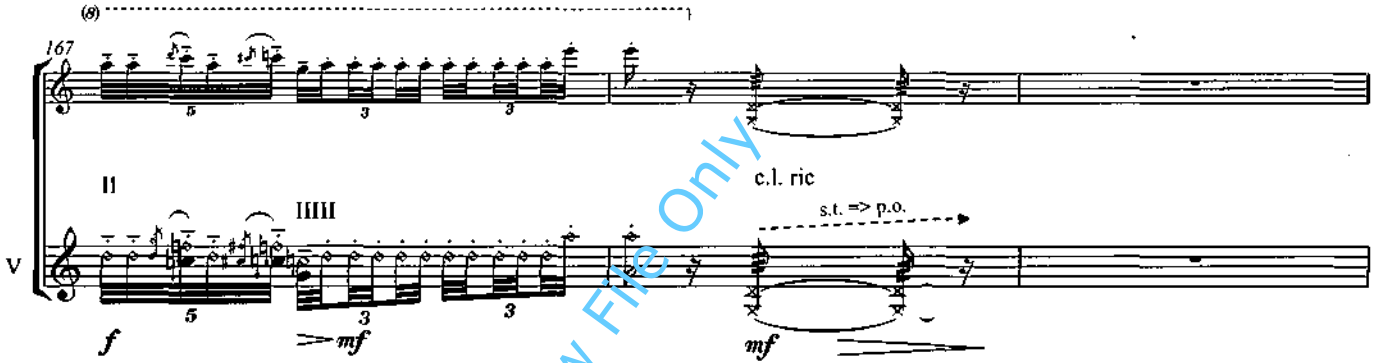

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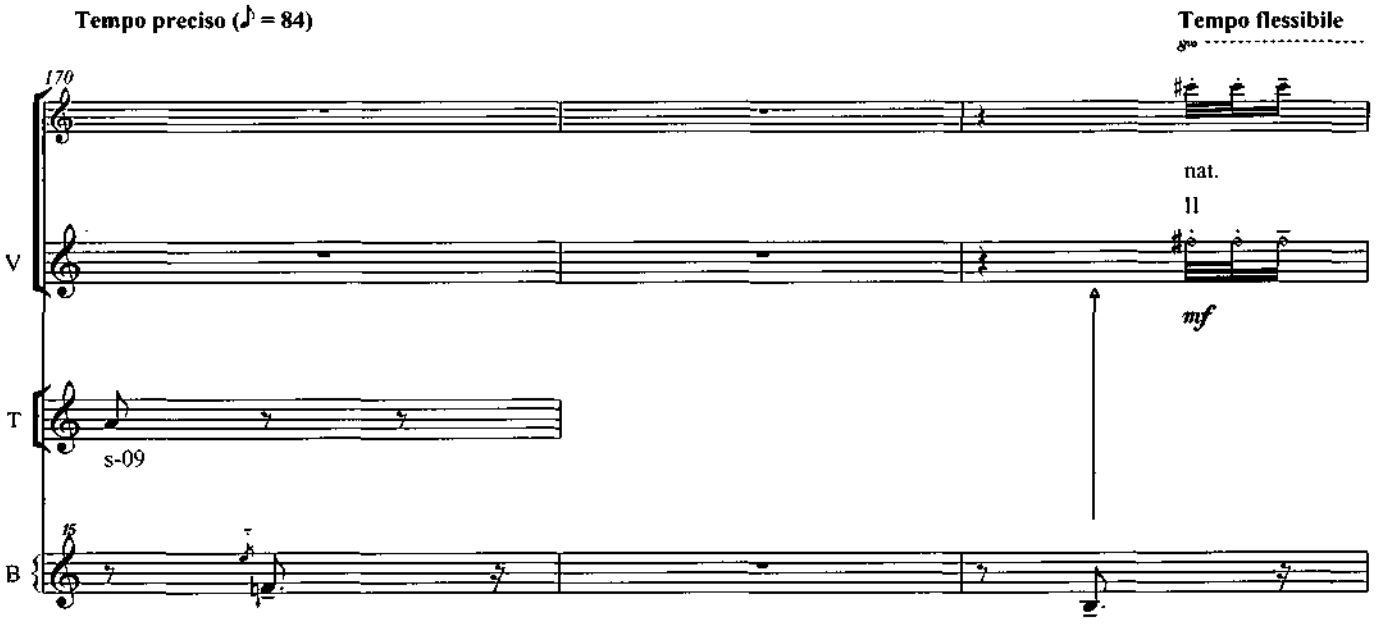

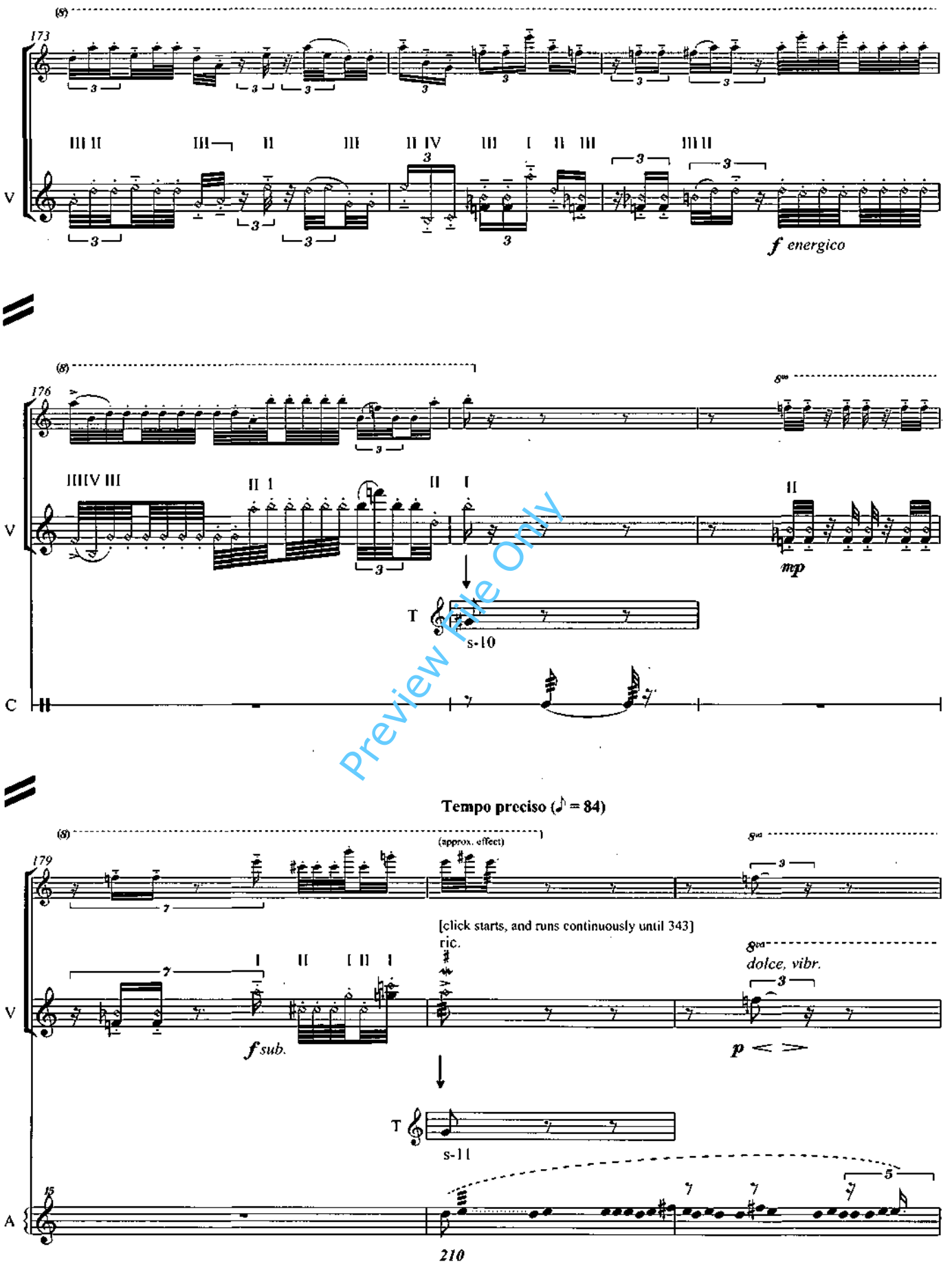

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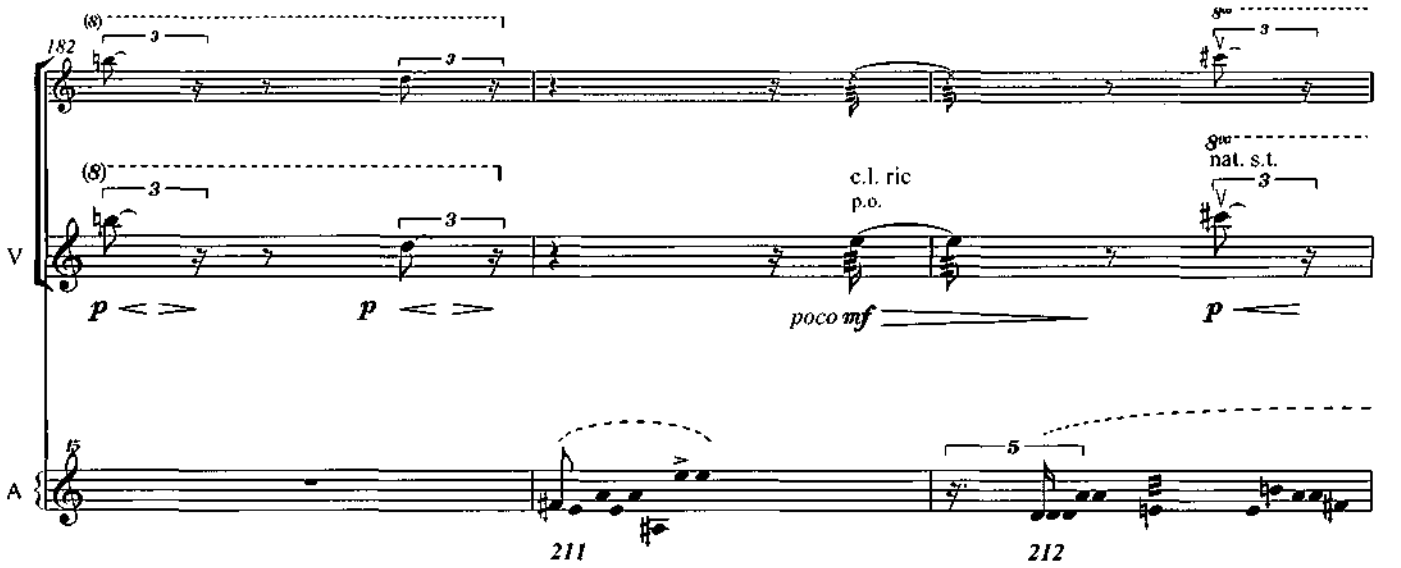

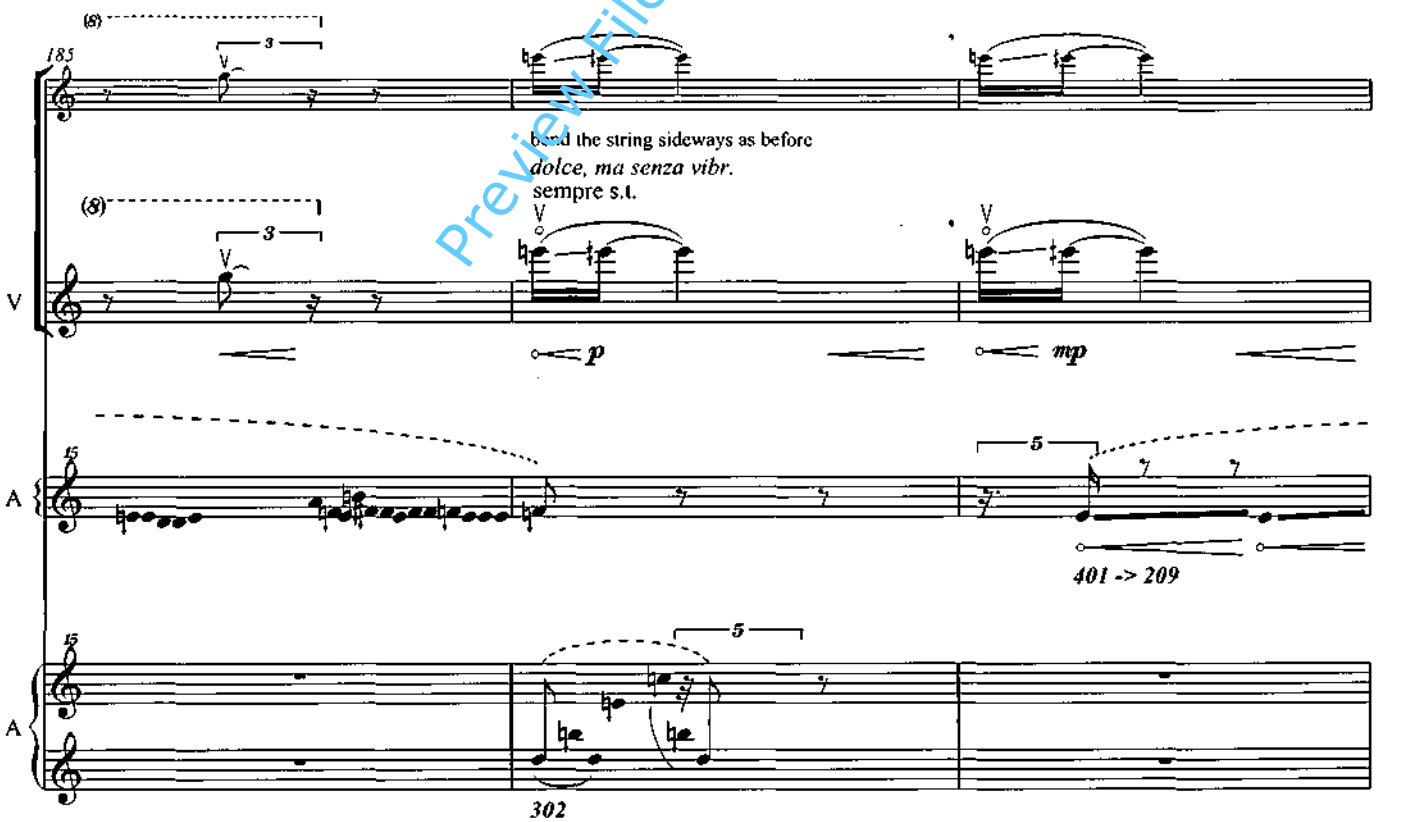

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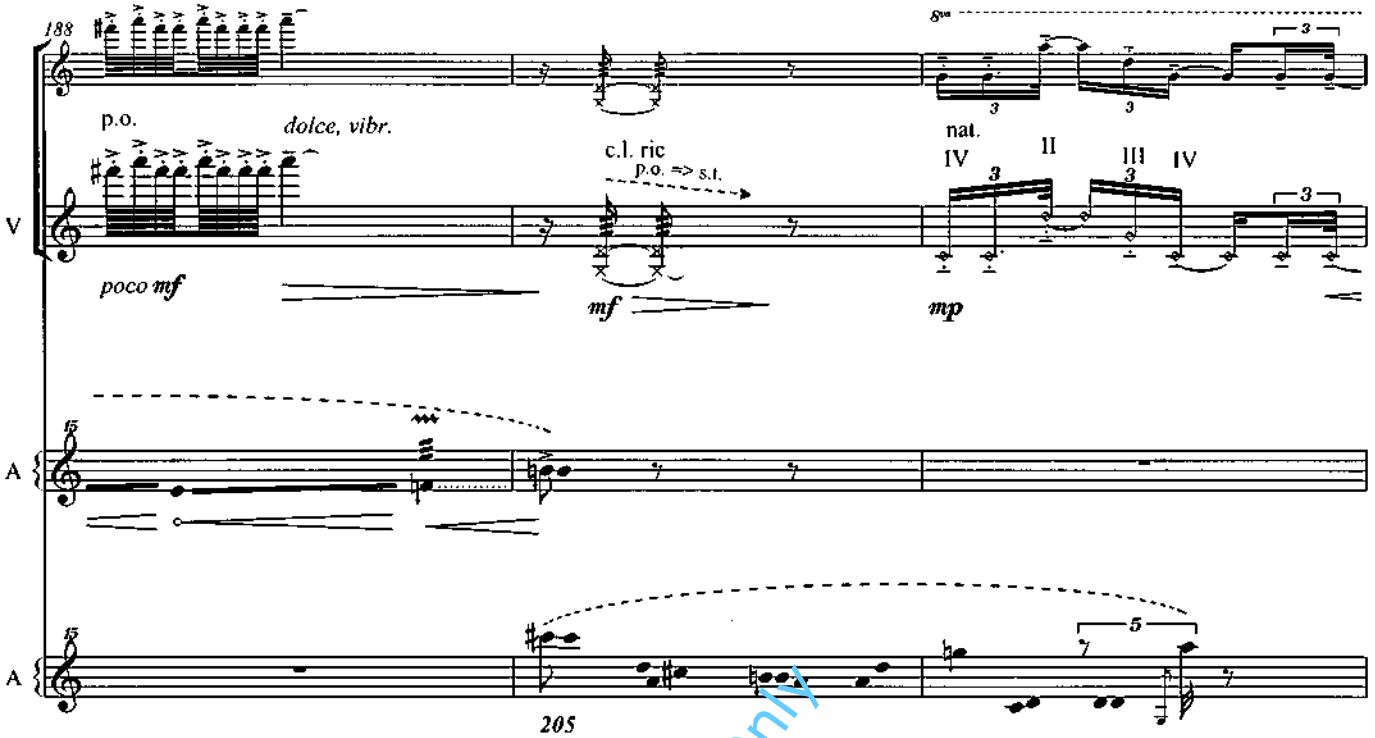

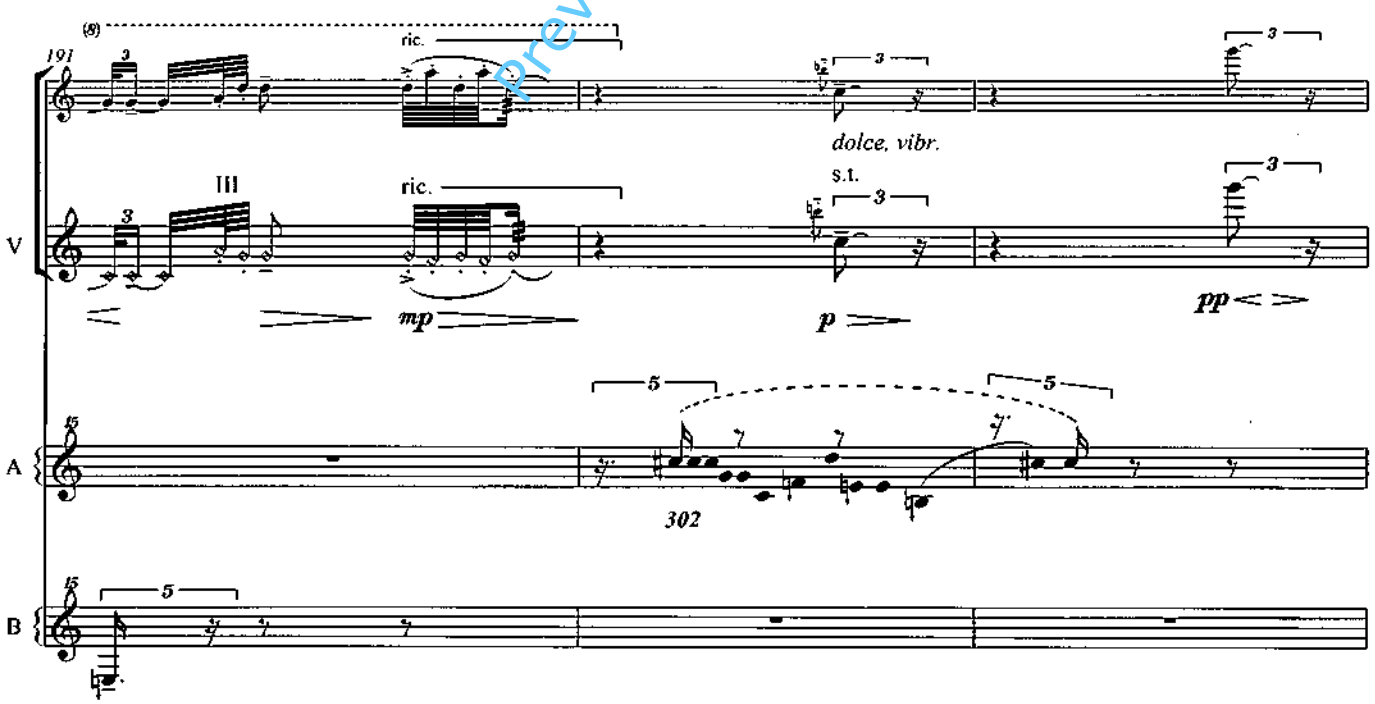

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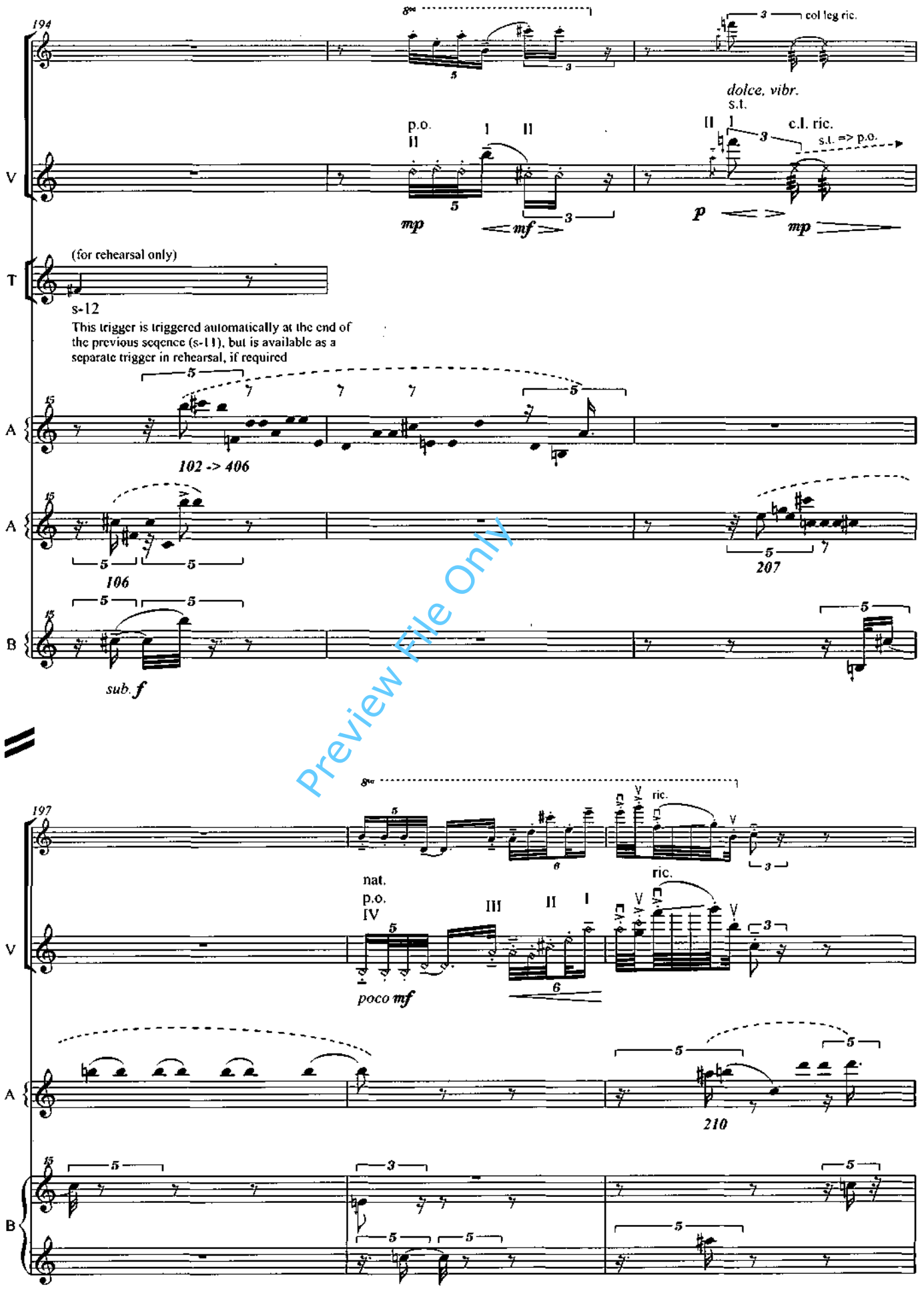

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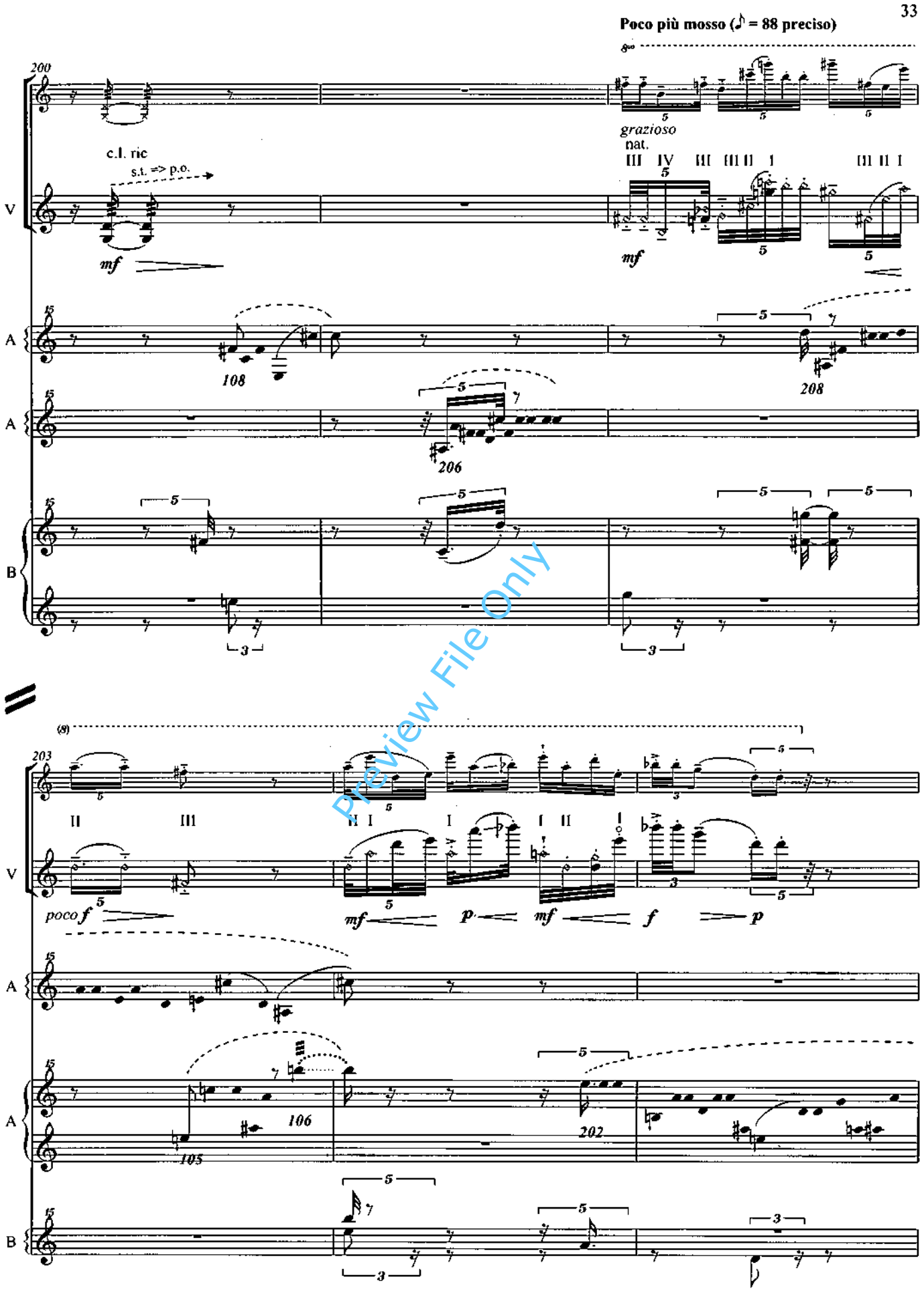

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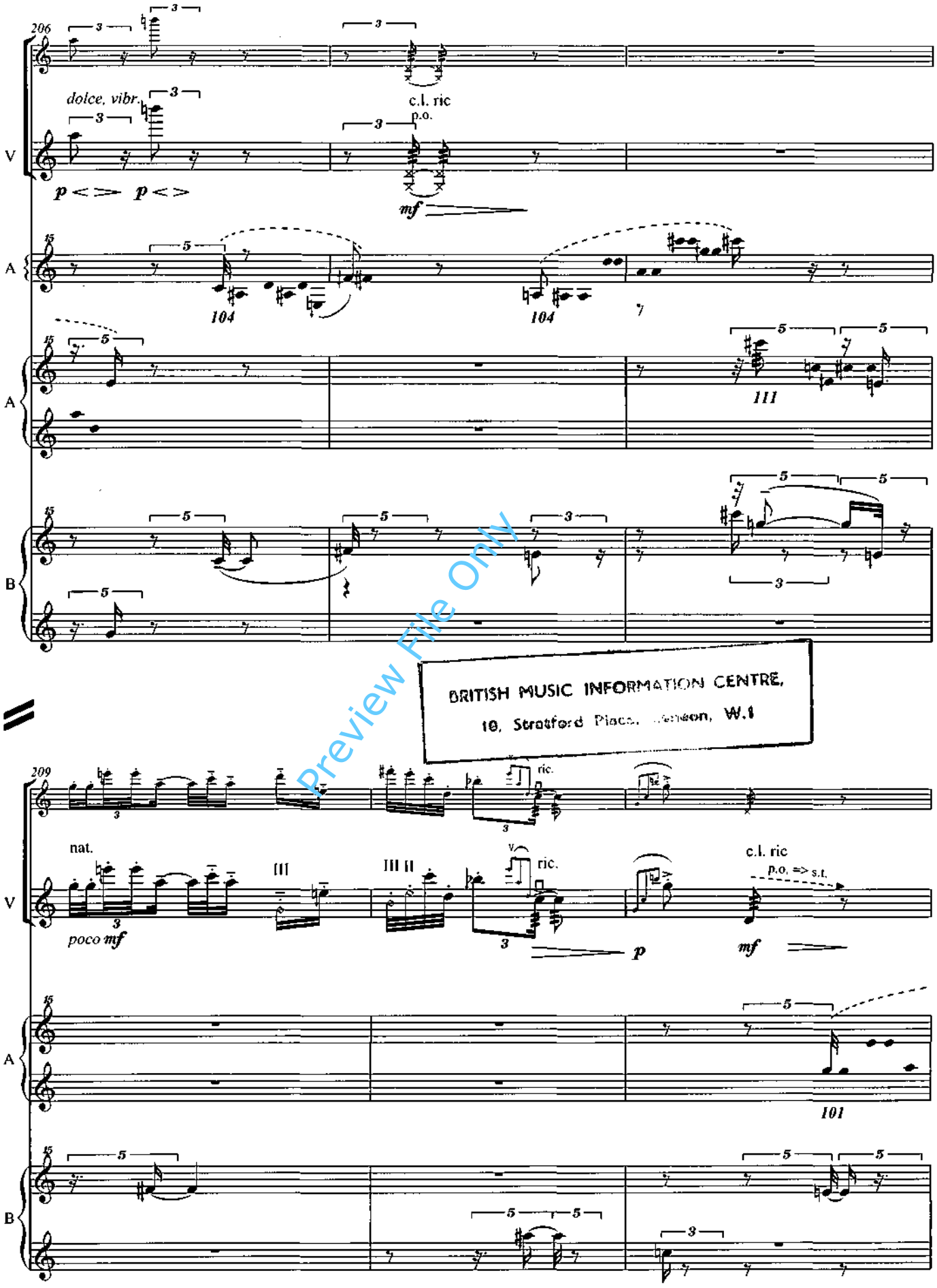

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BRITISH MUSIC INFORMATION CENTRE,
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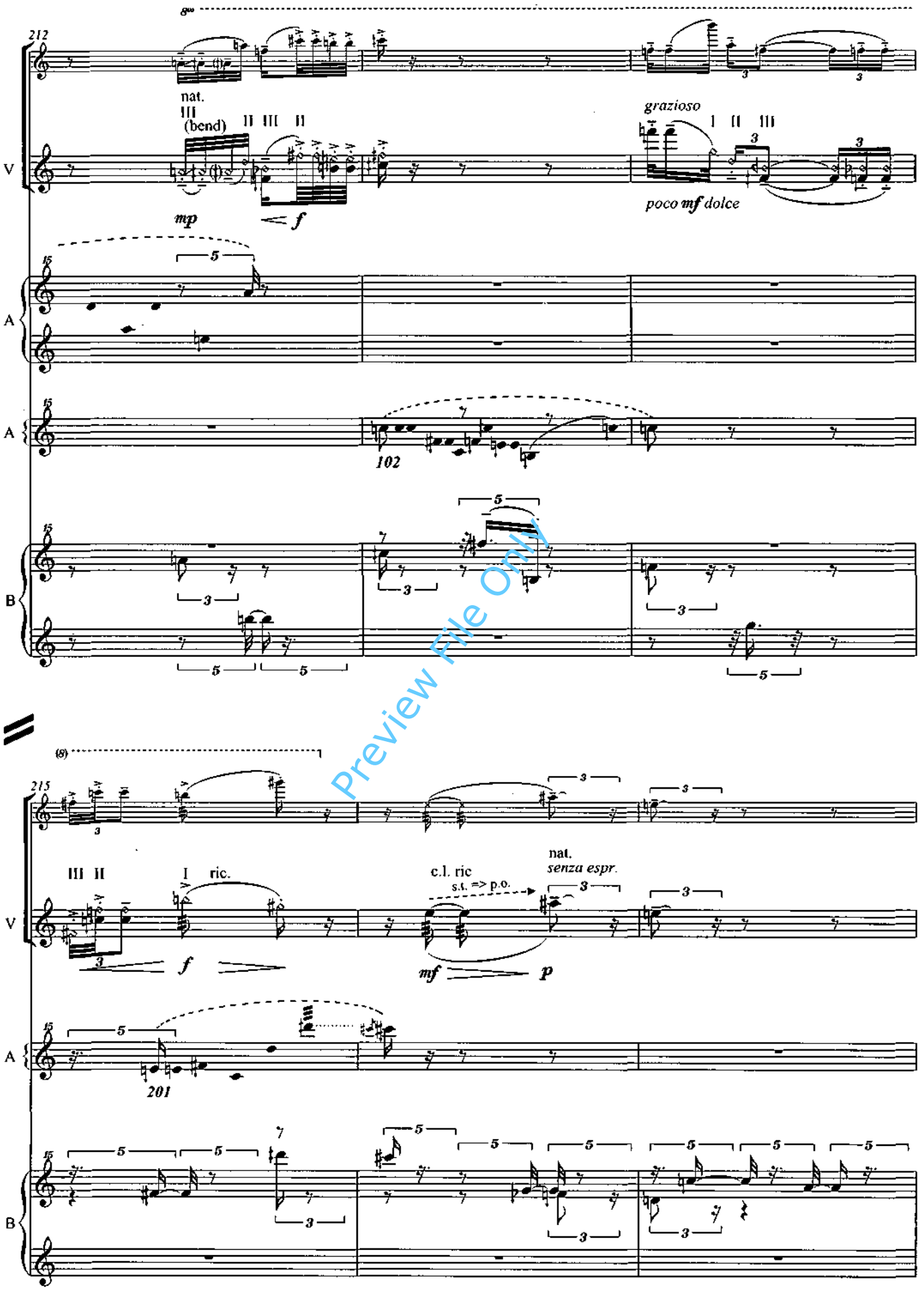

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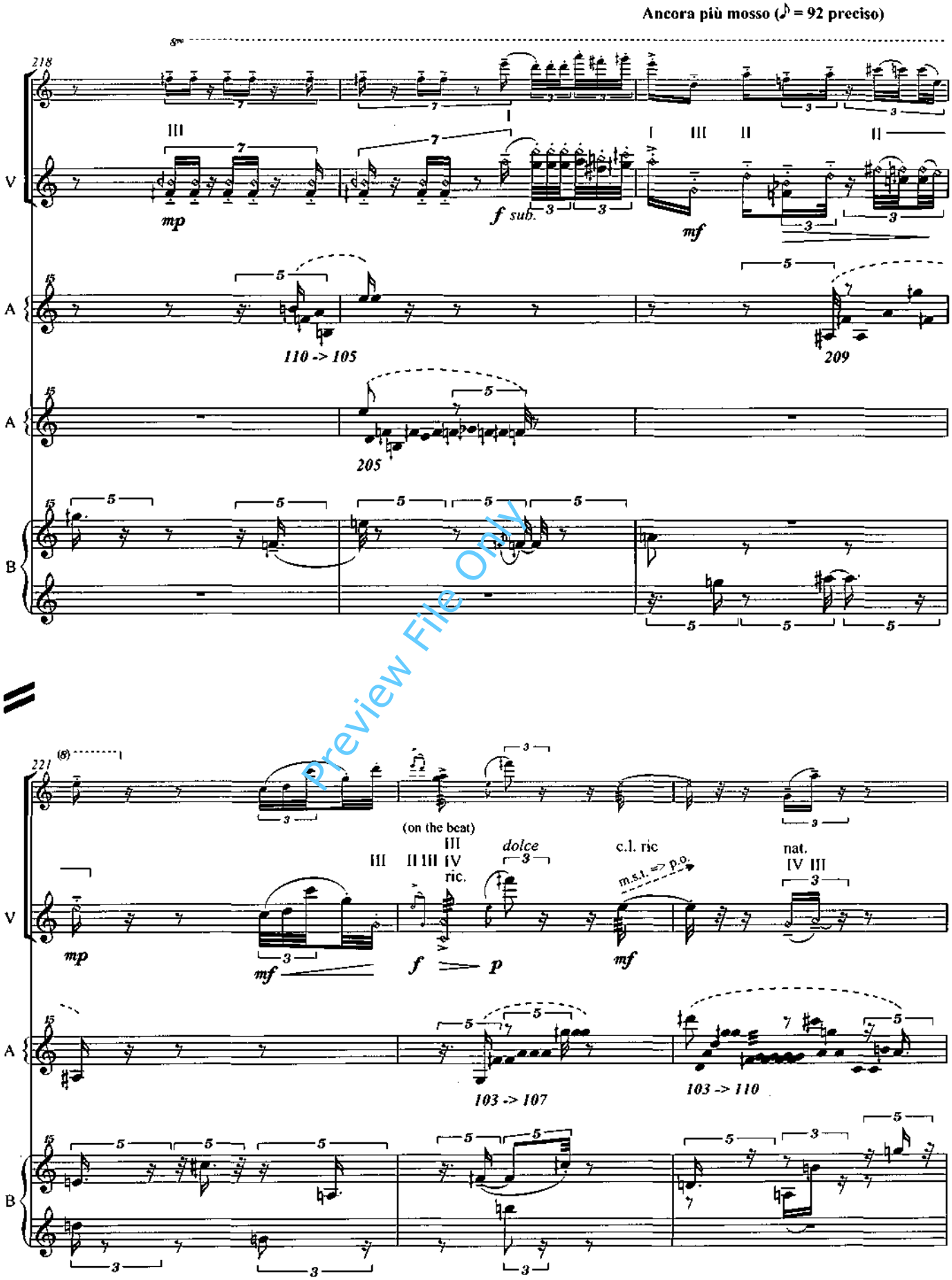

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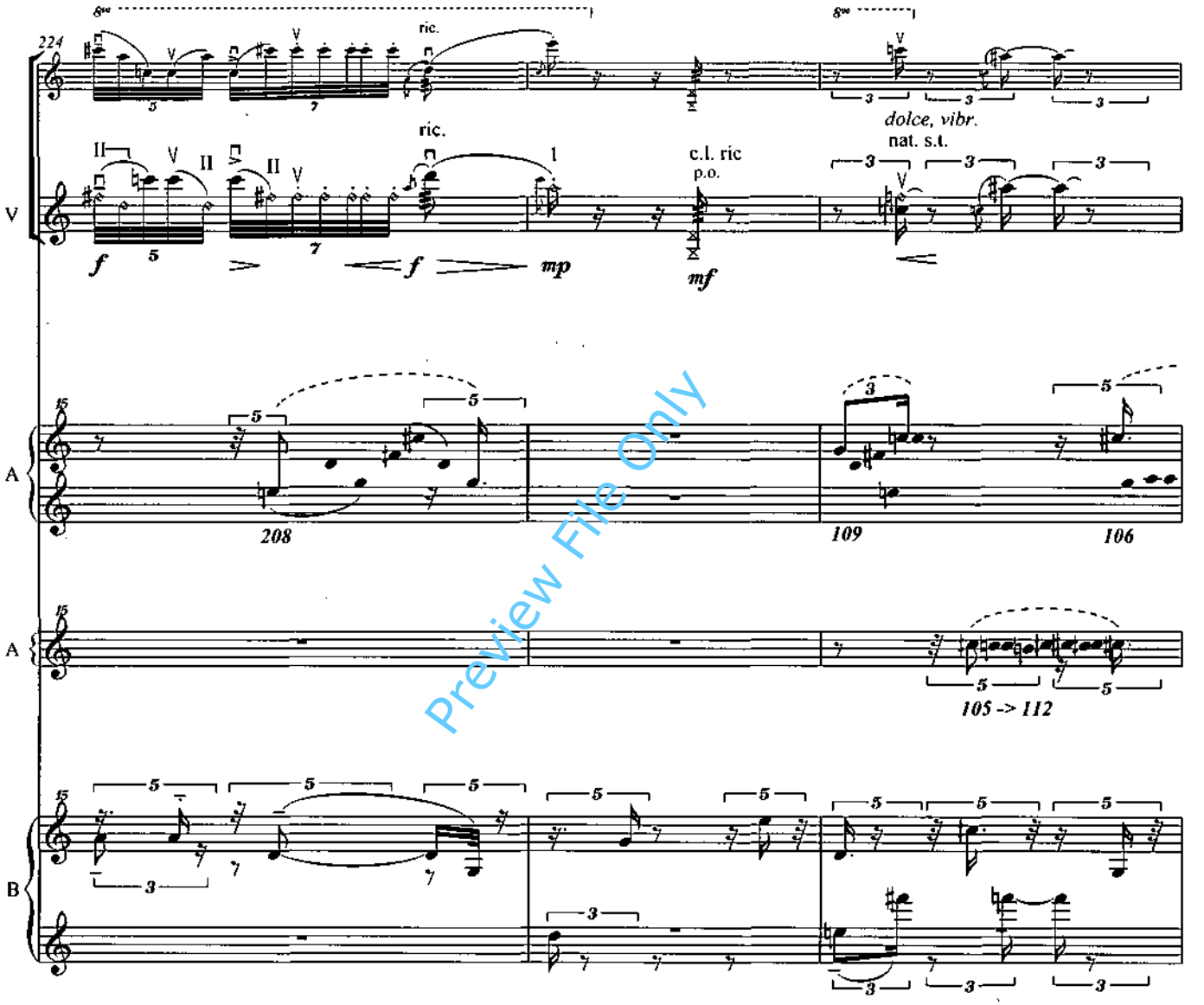

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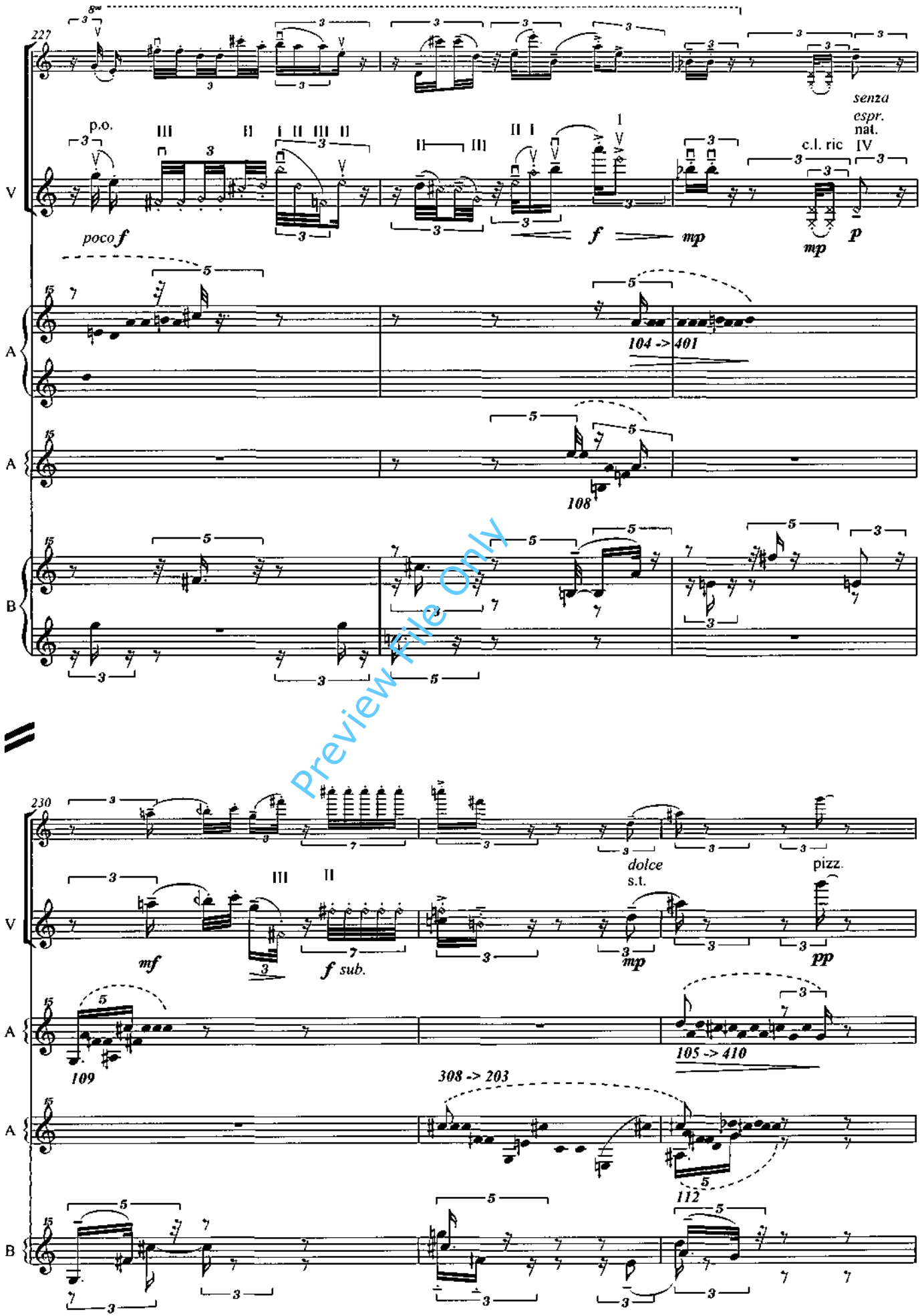

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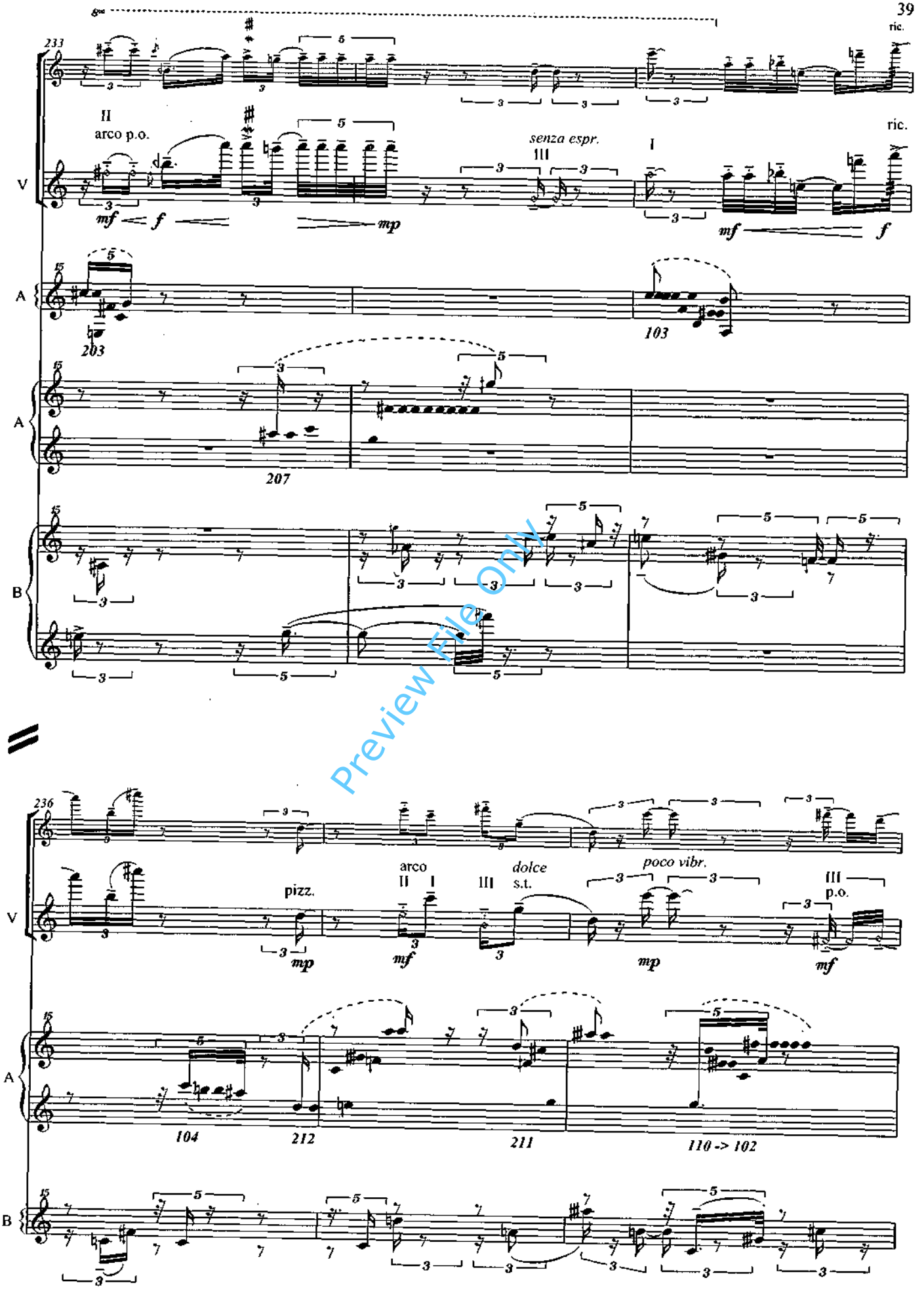

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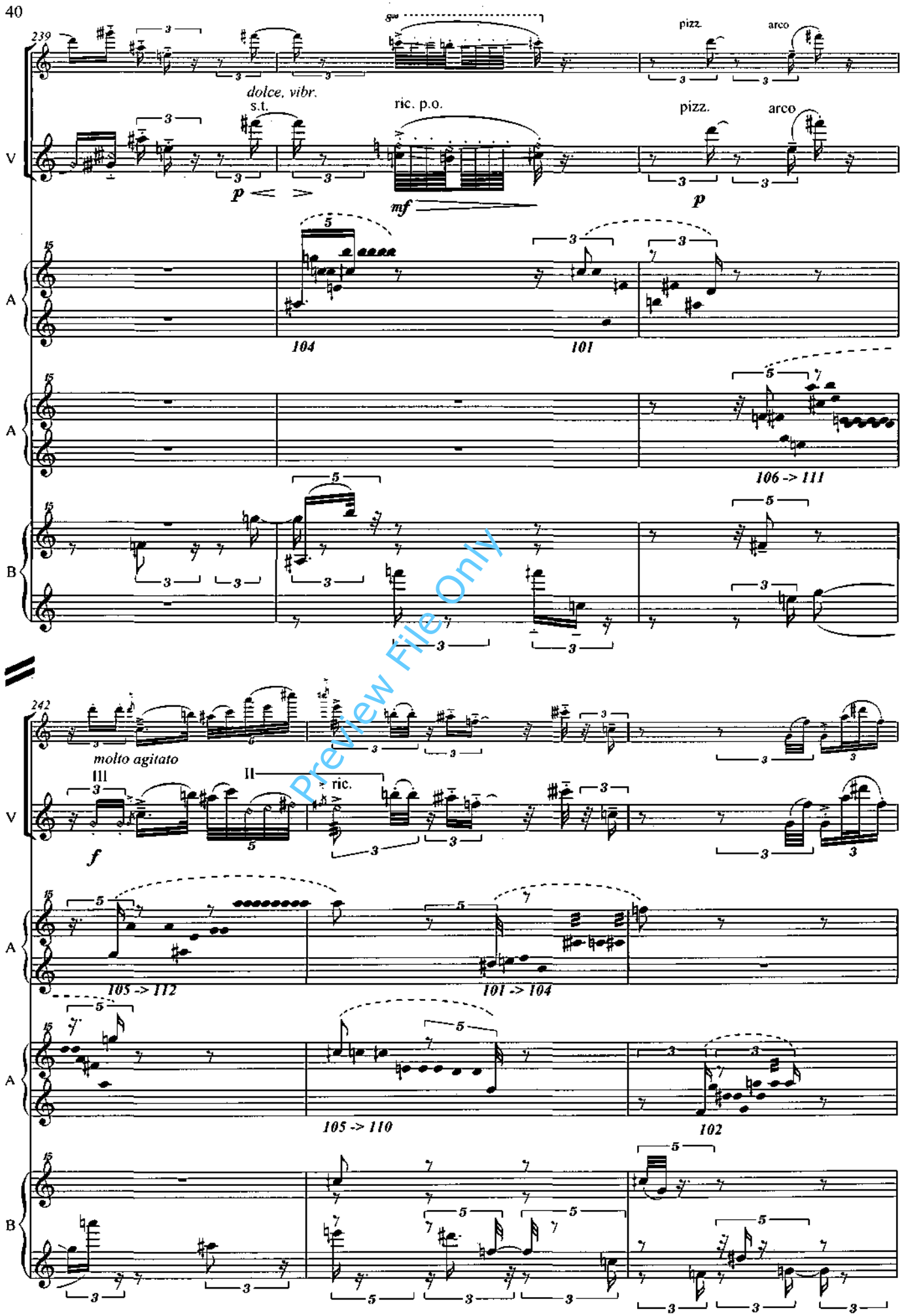

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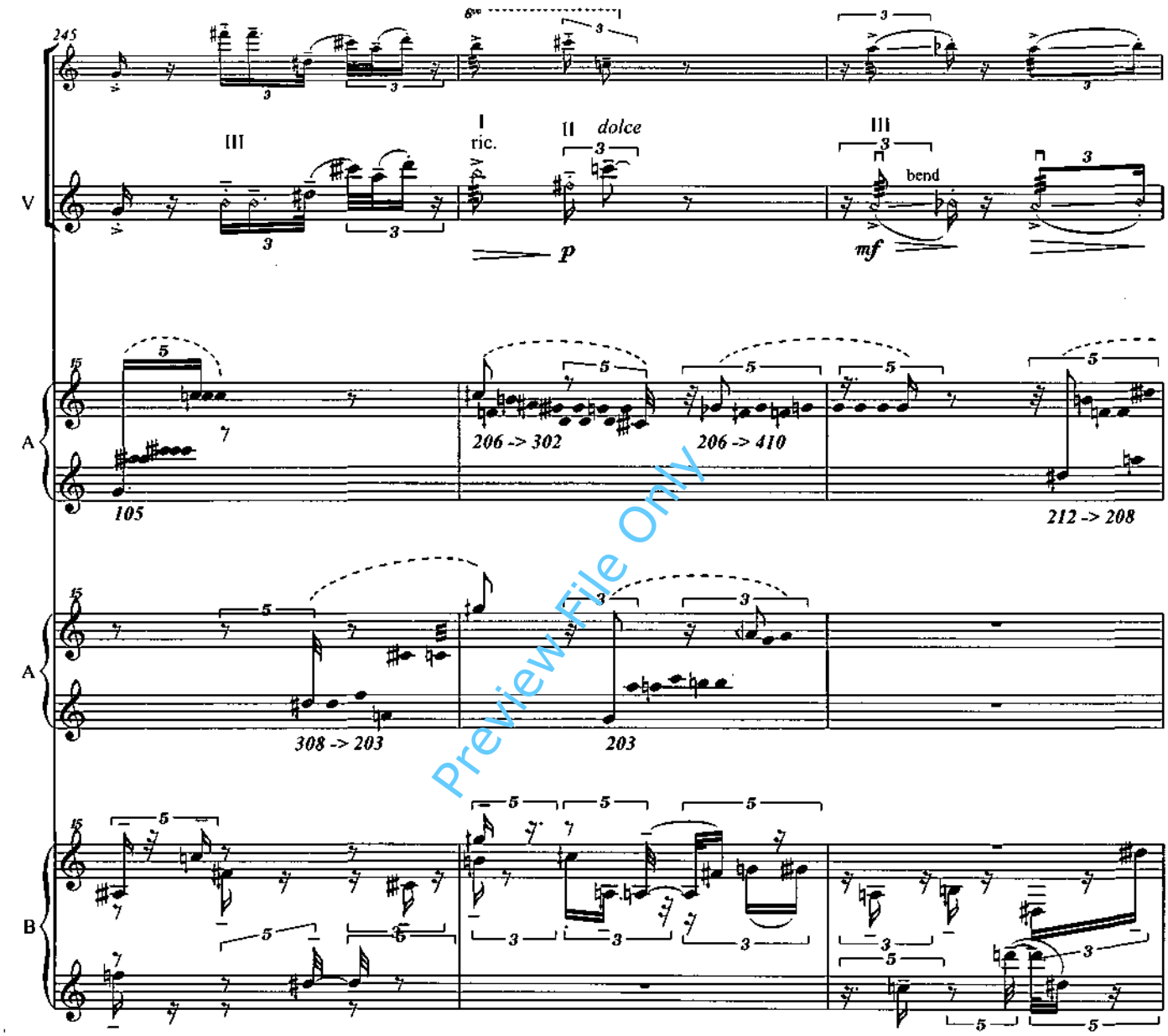

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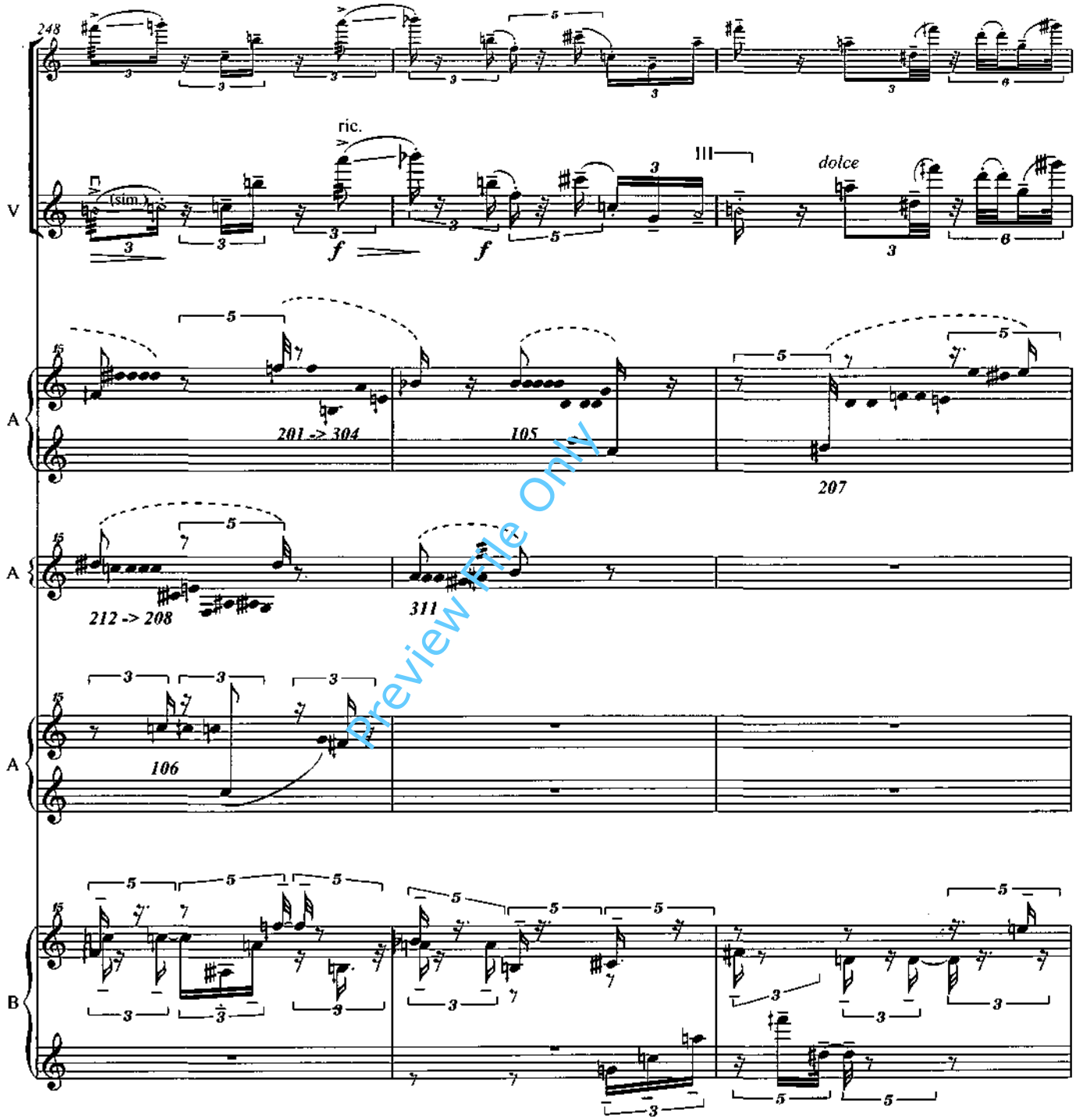

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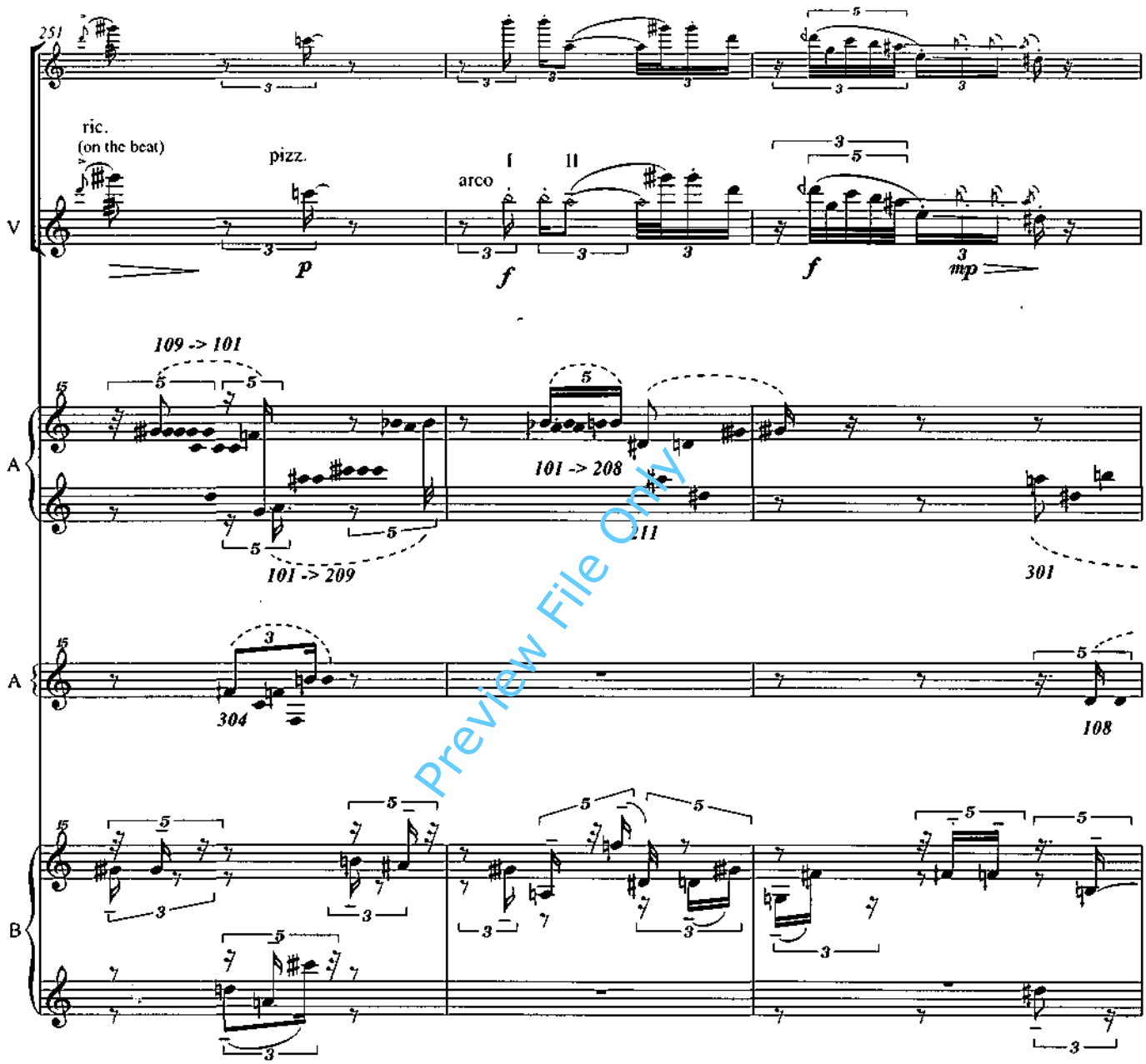

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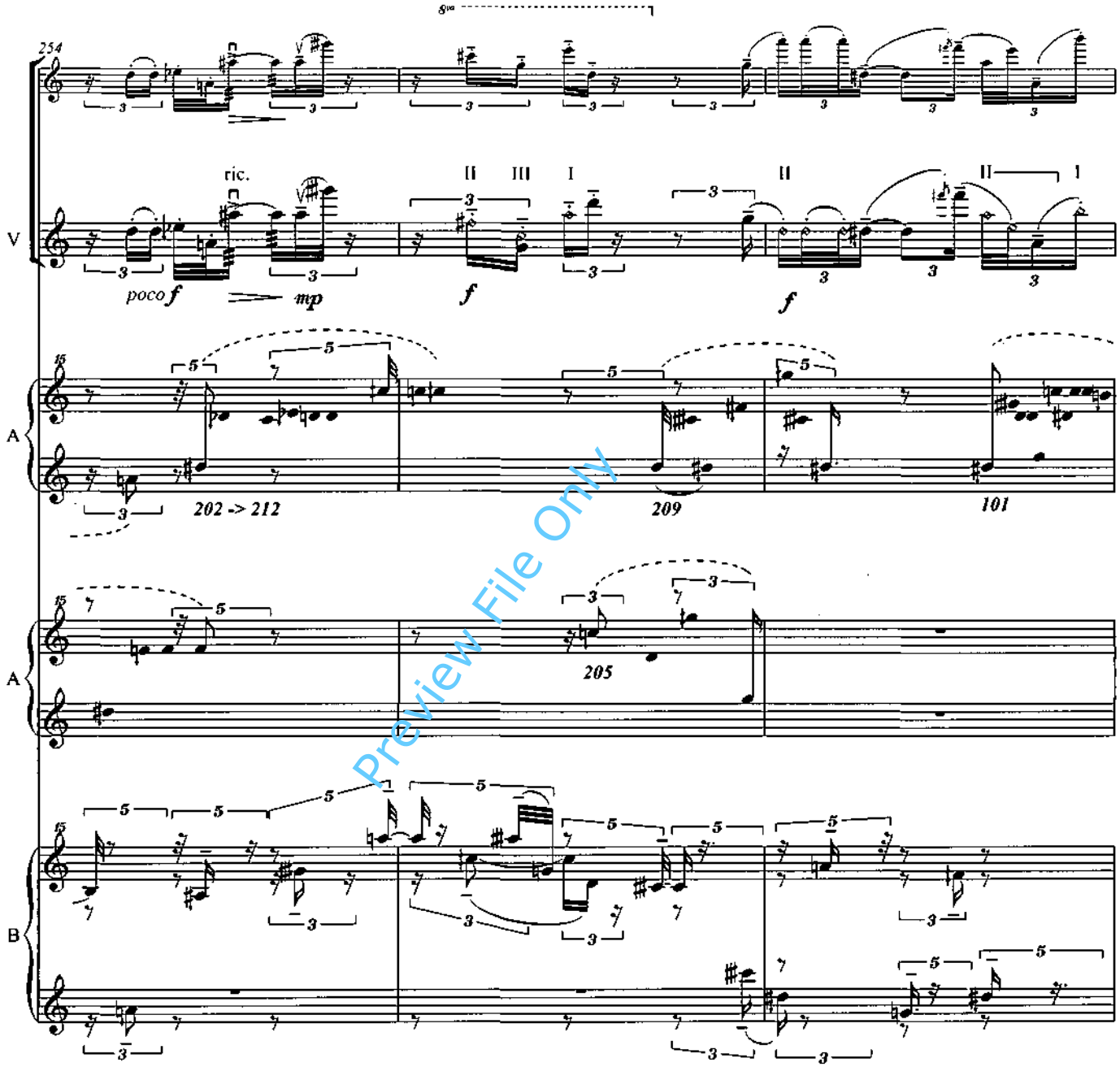

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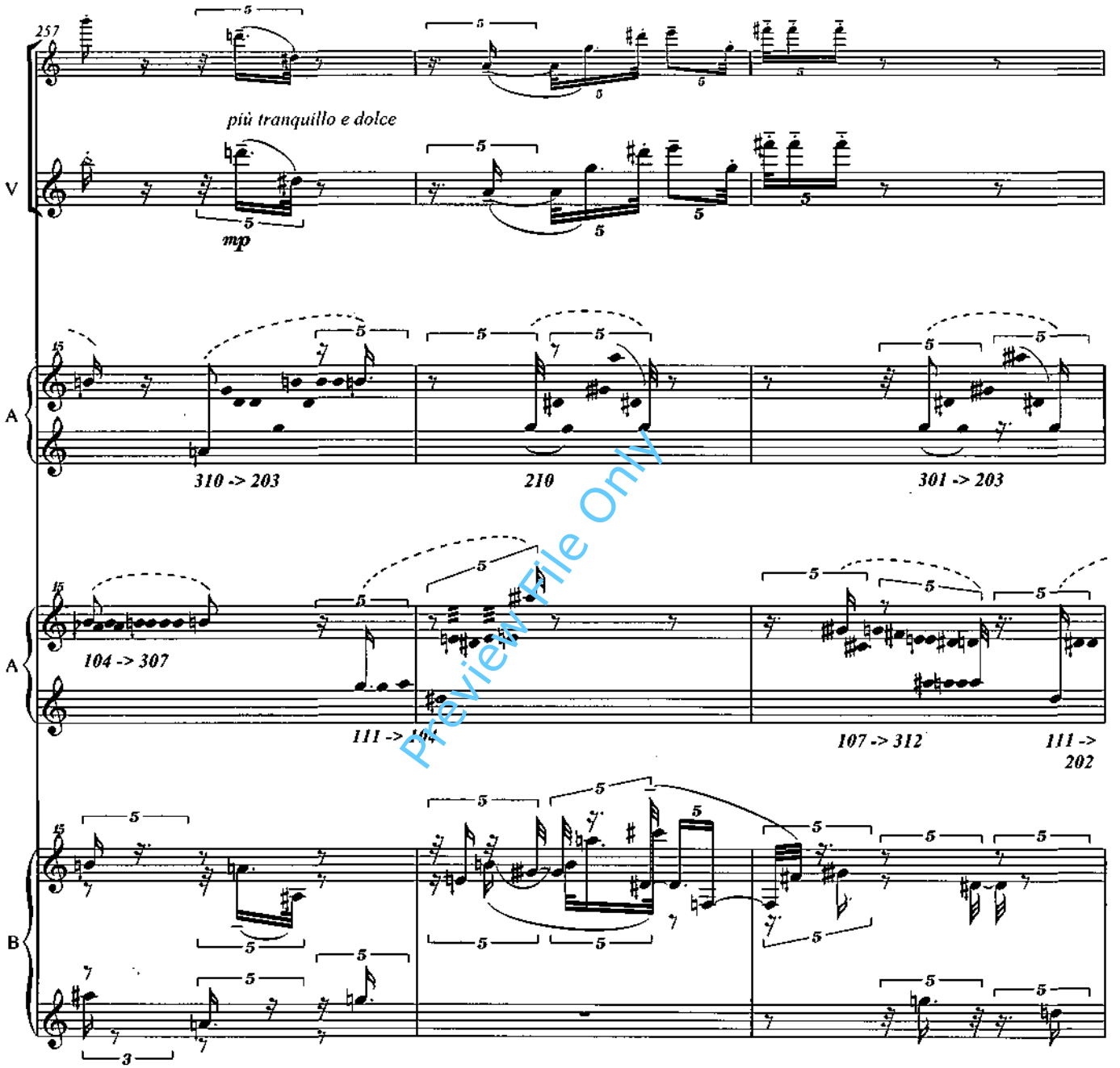

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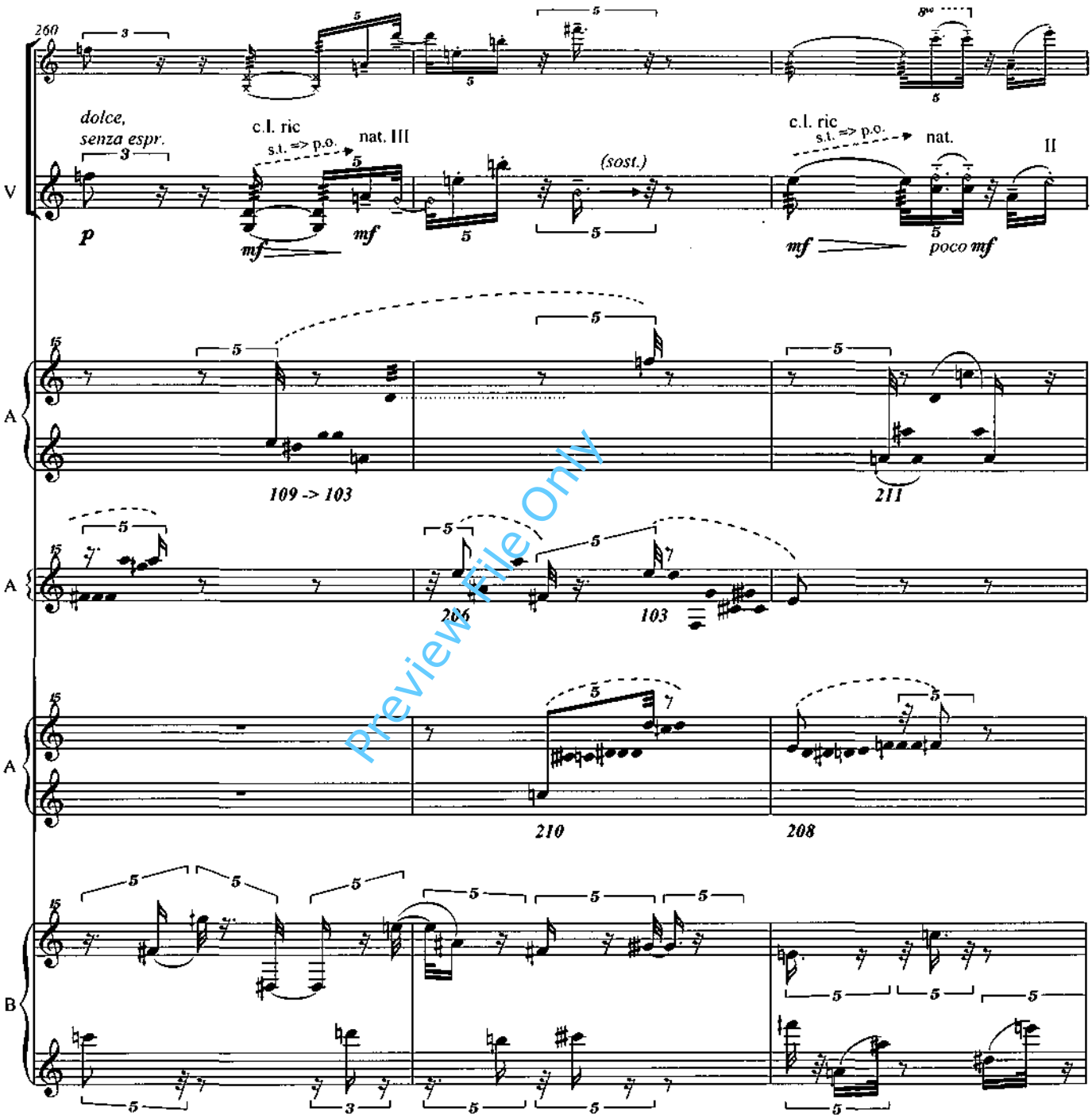

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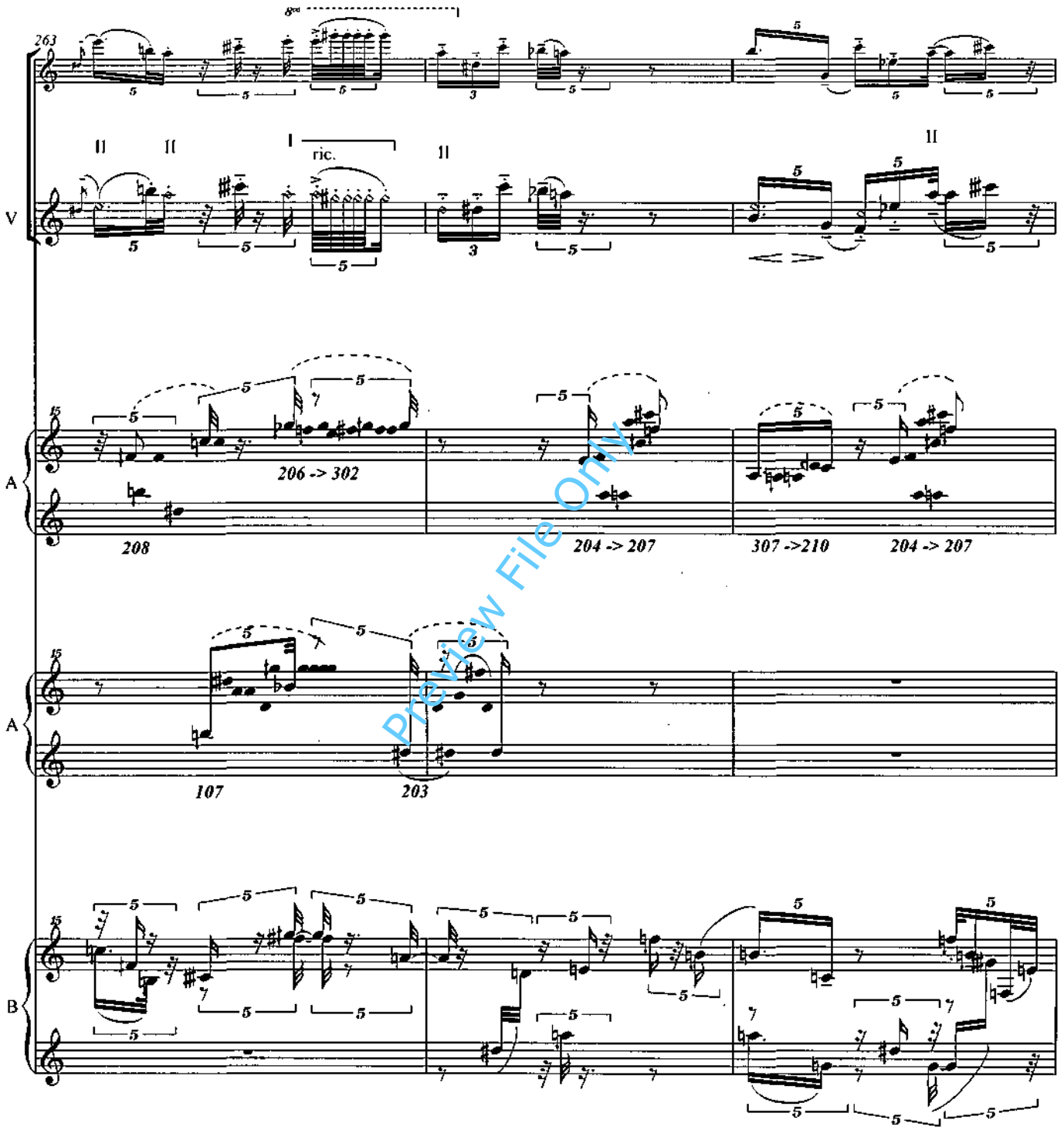

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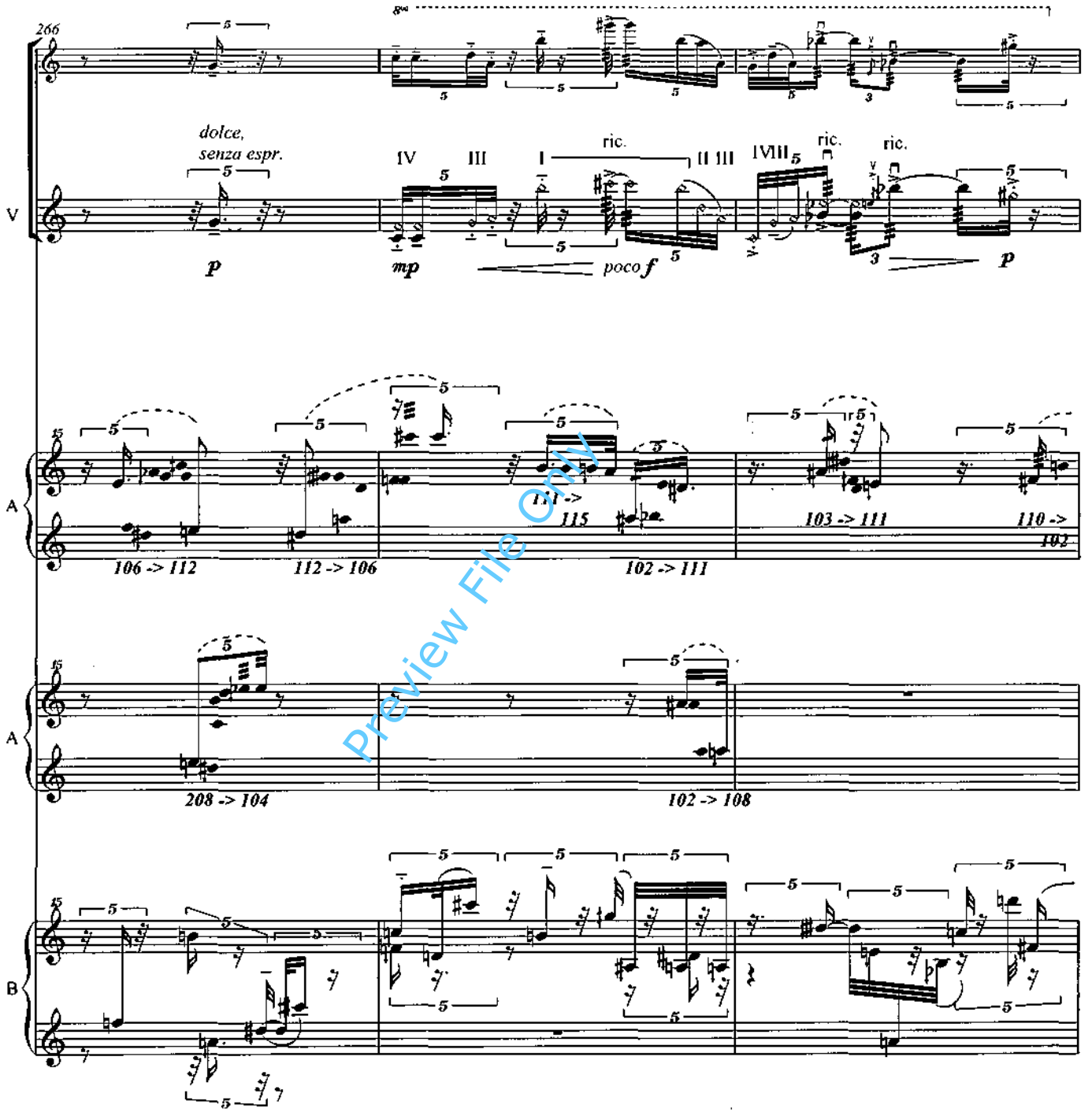

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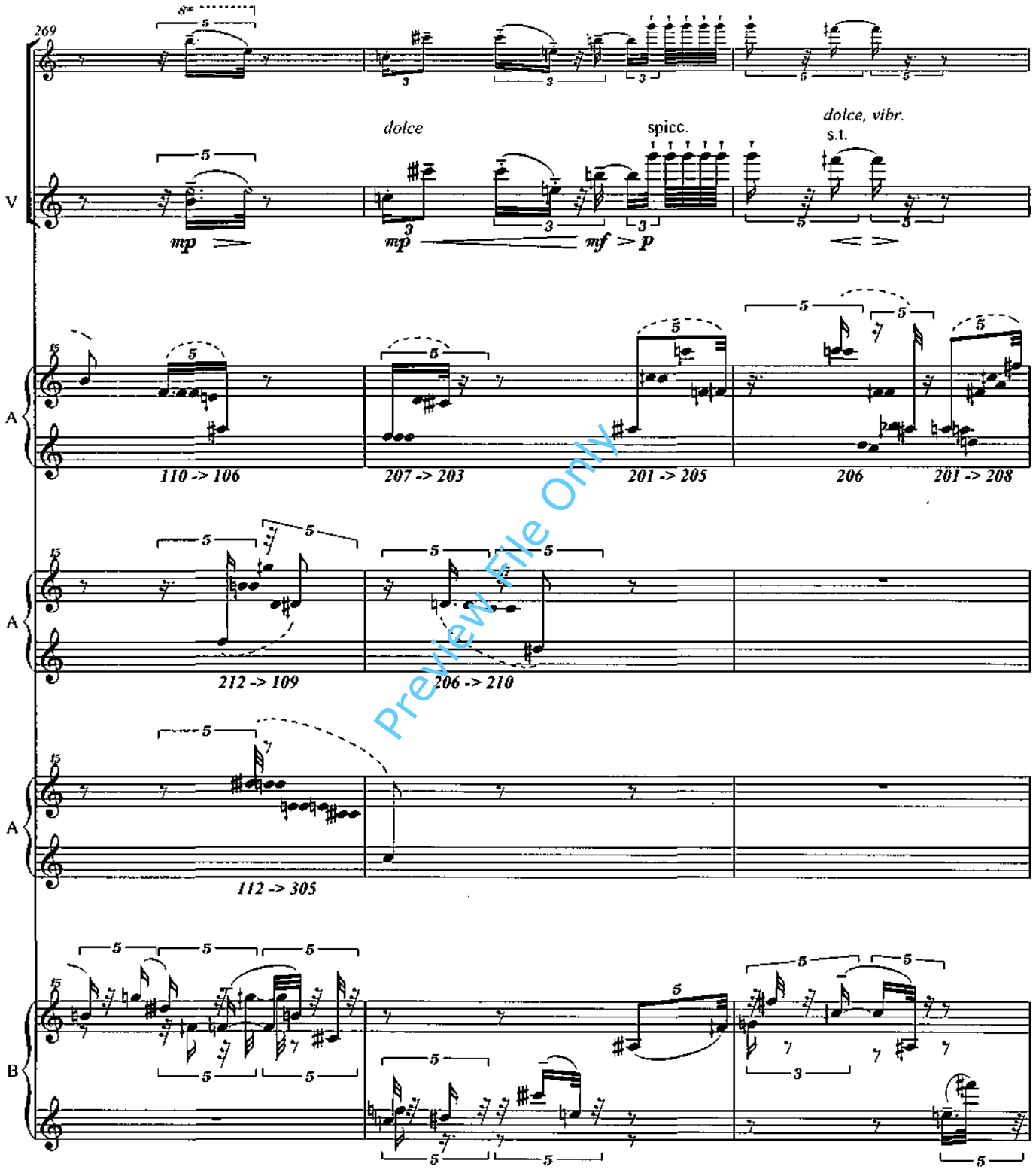

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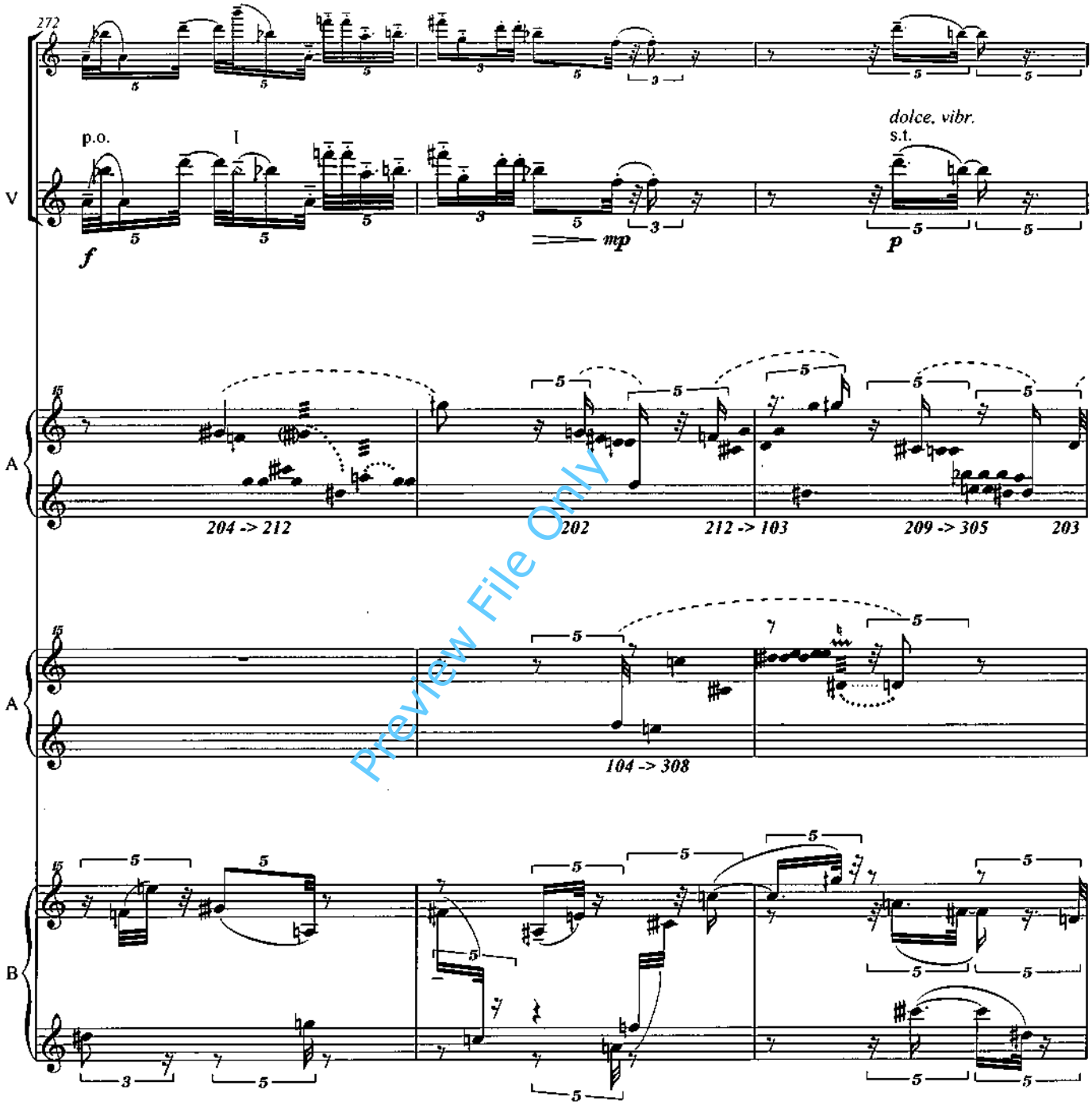

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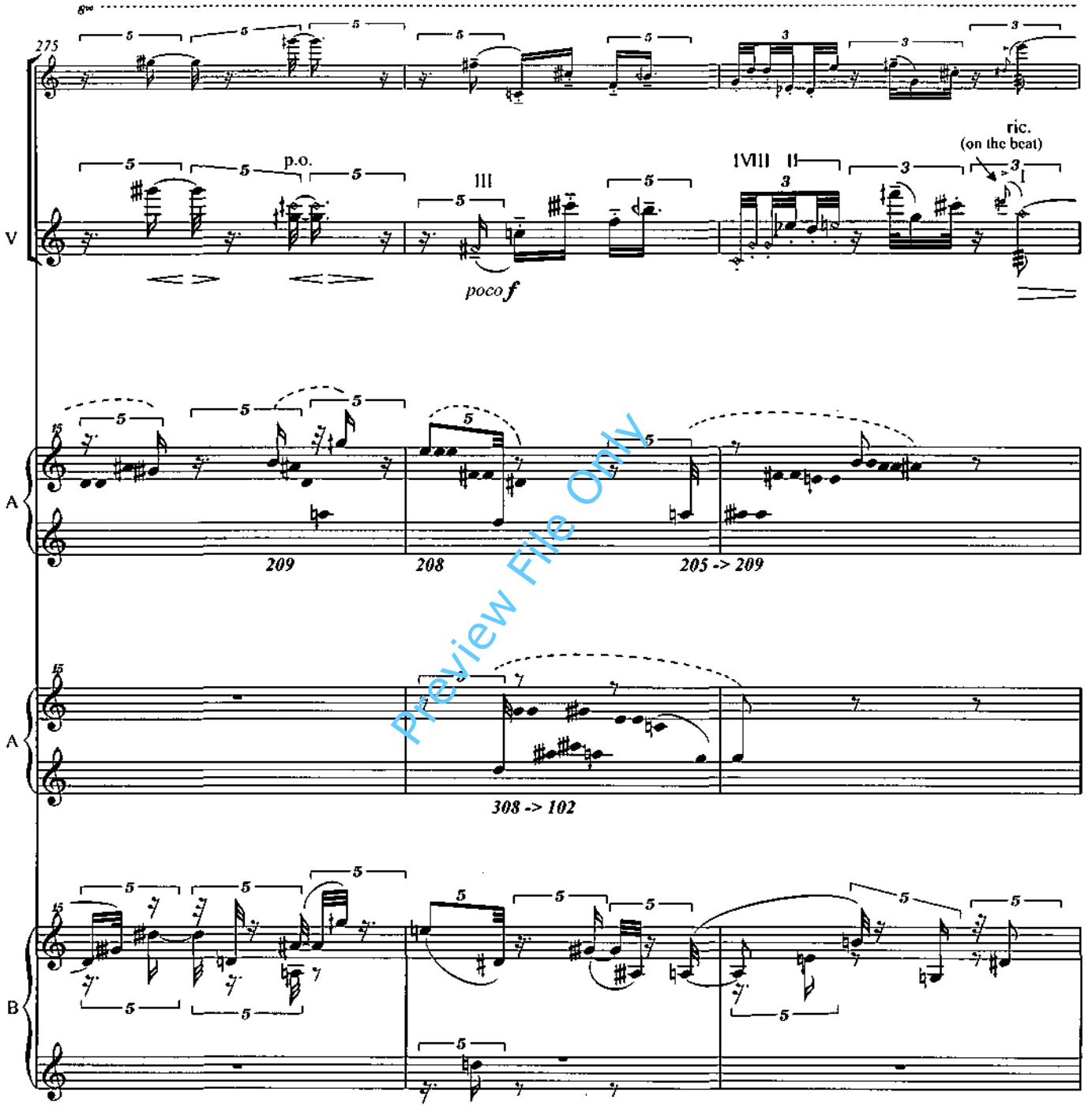

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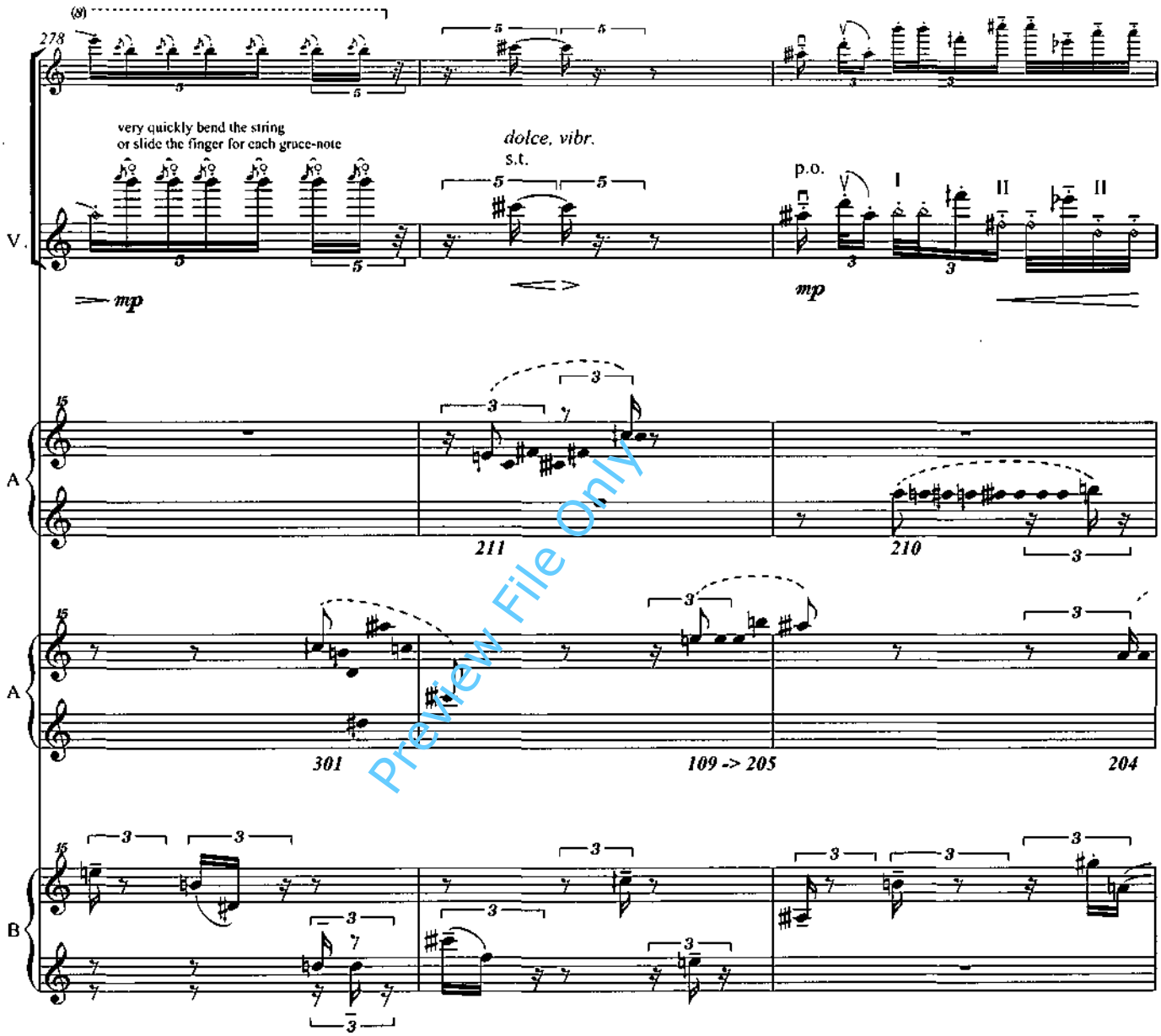

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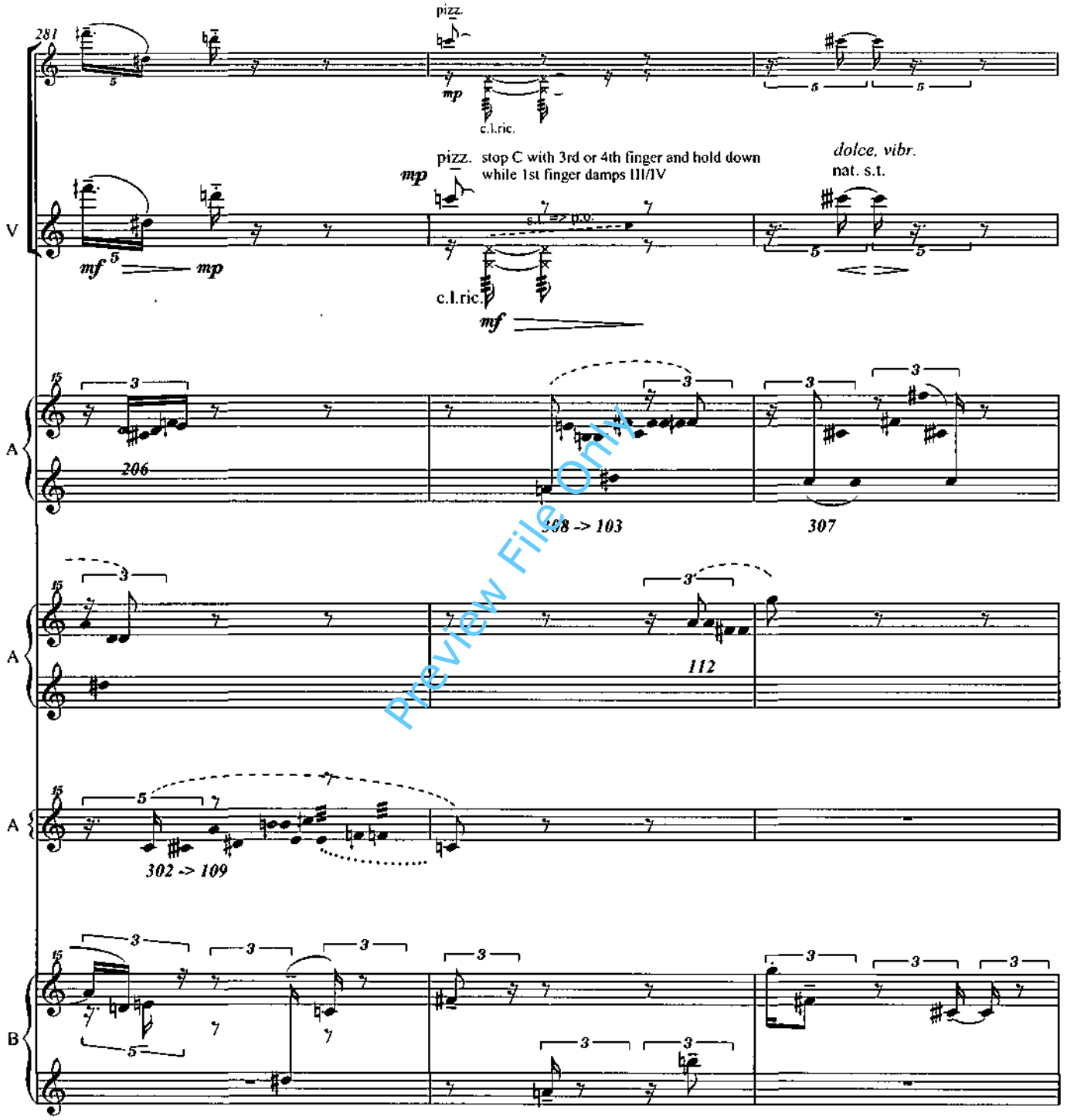
BRITISH MUSIC INFORMATION CENTRE,
10, Stra... ...on, W.1



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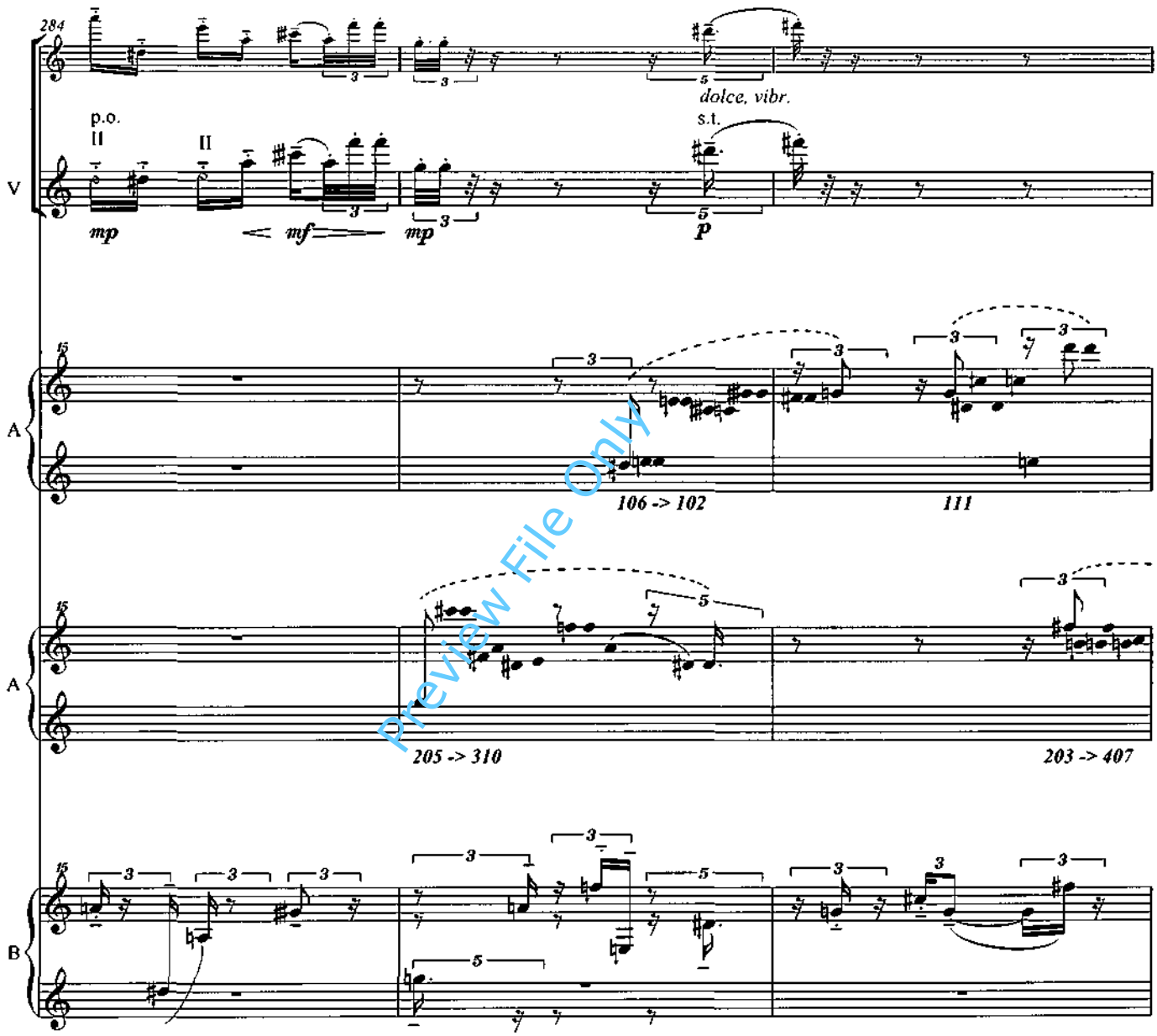

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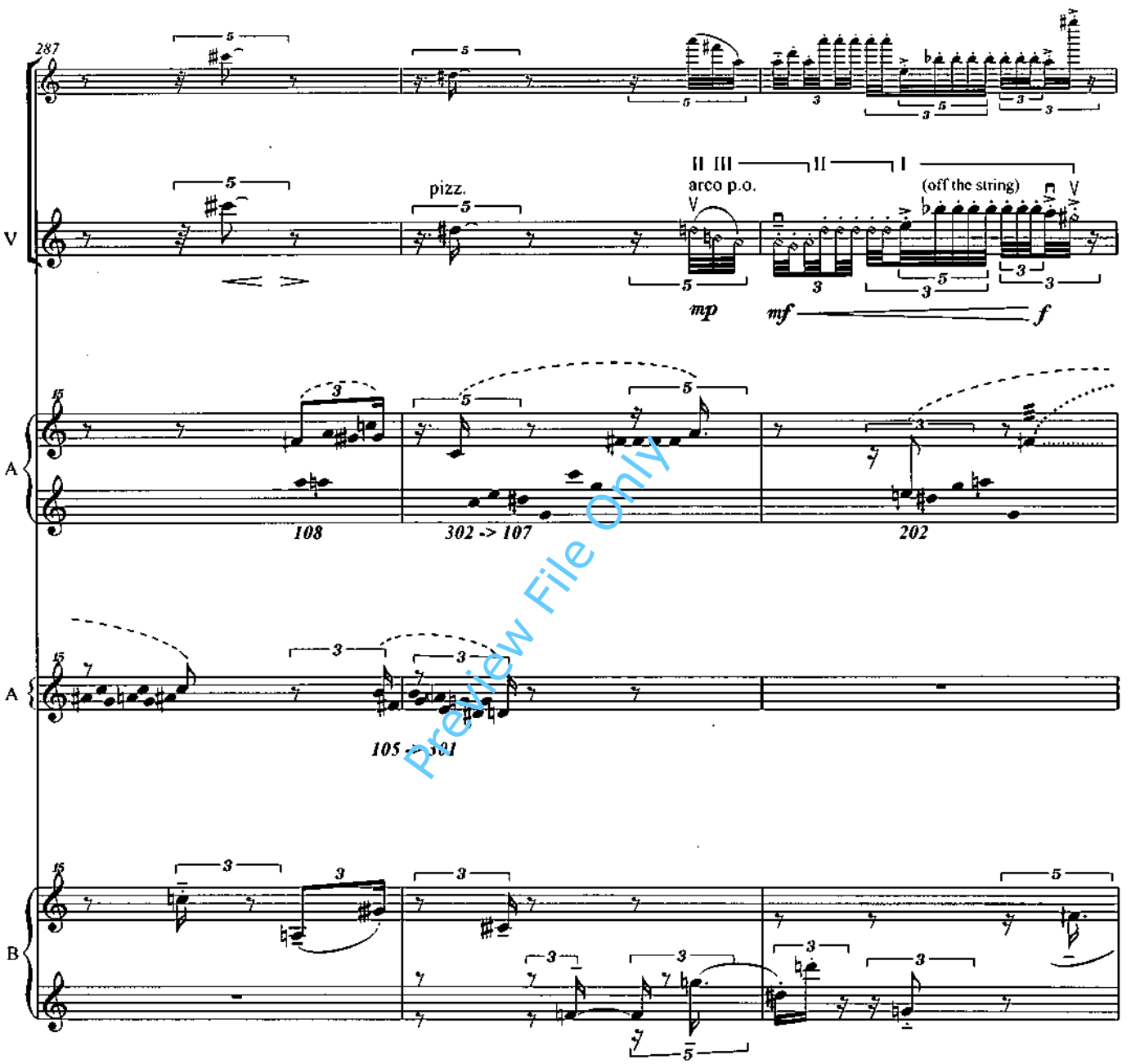

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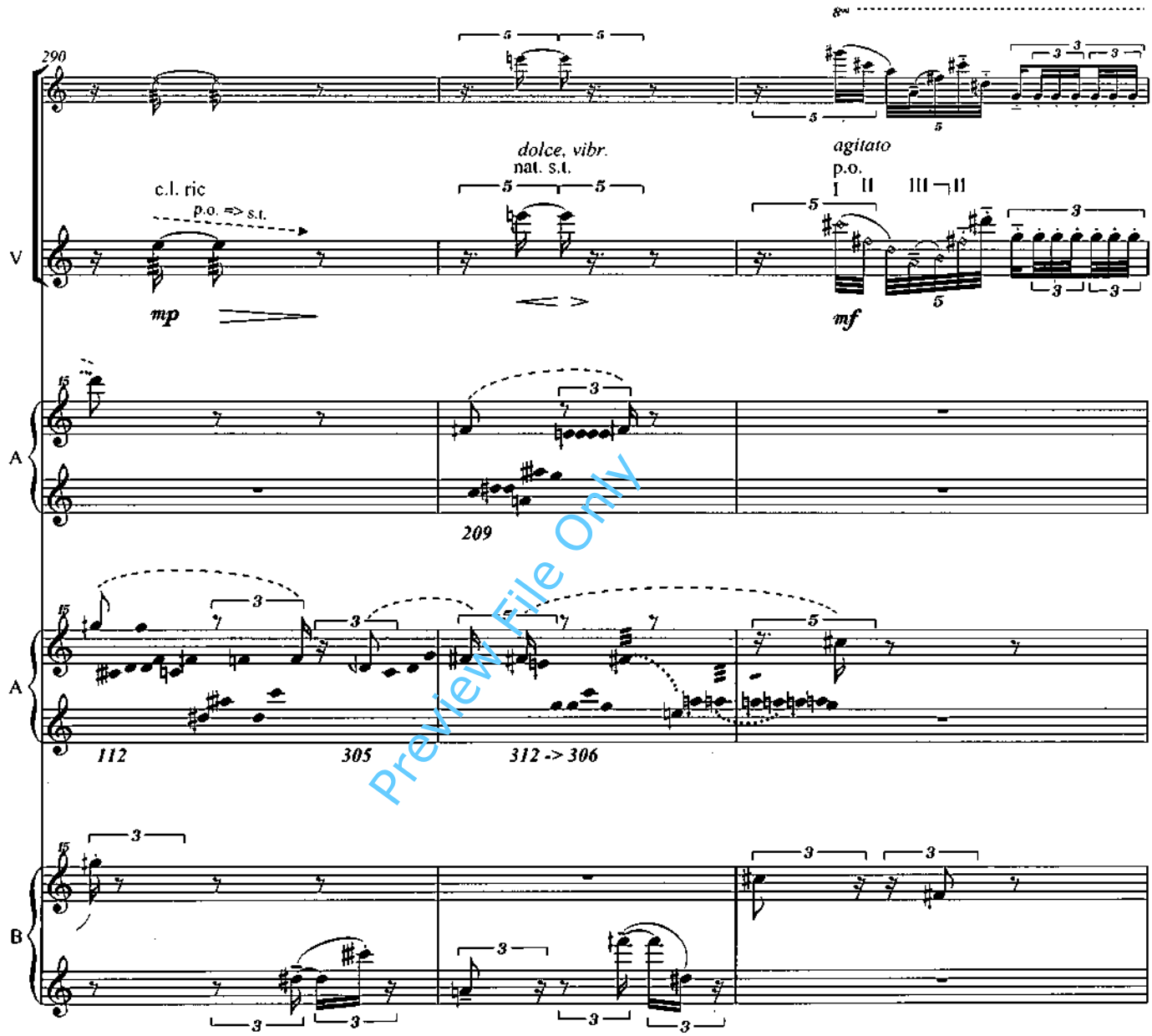

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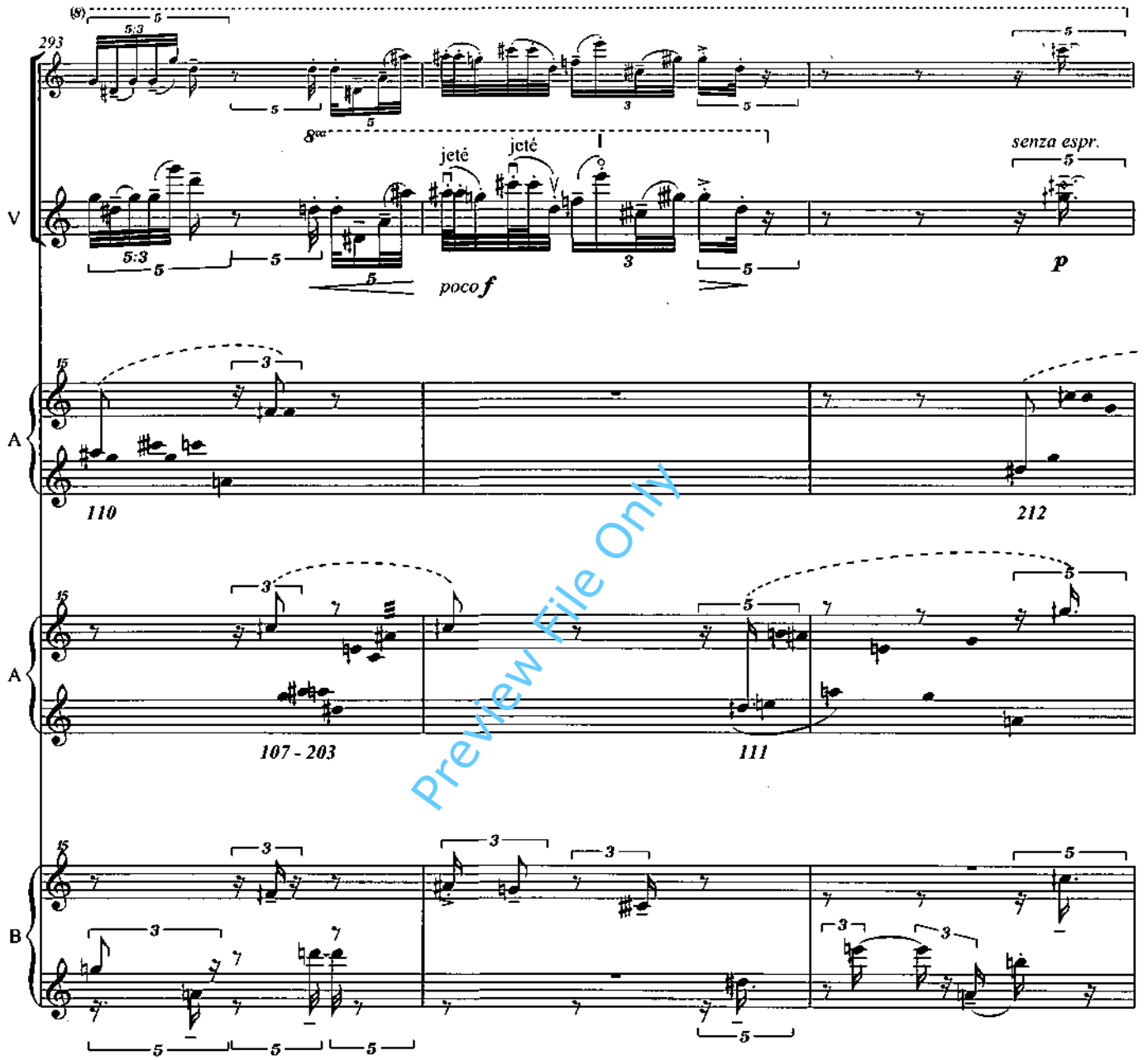

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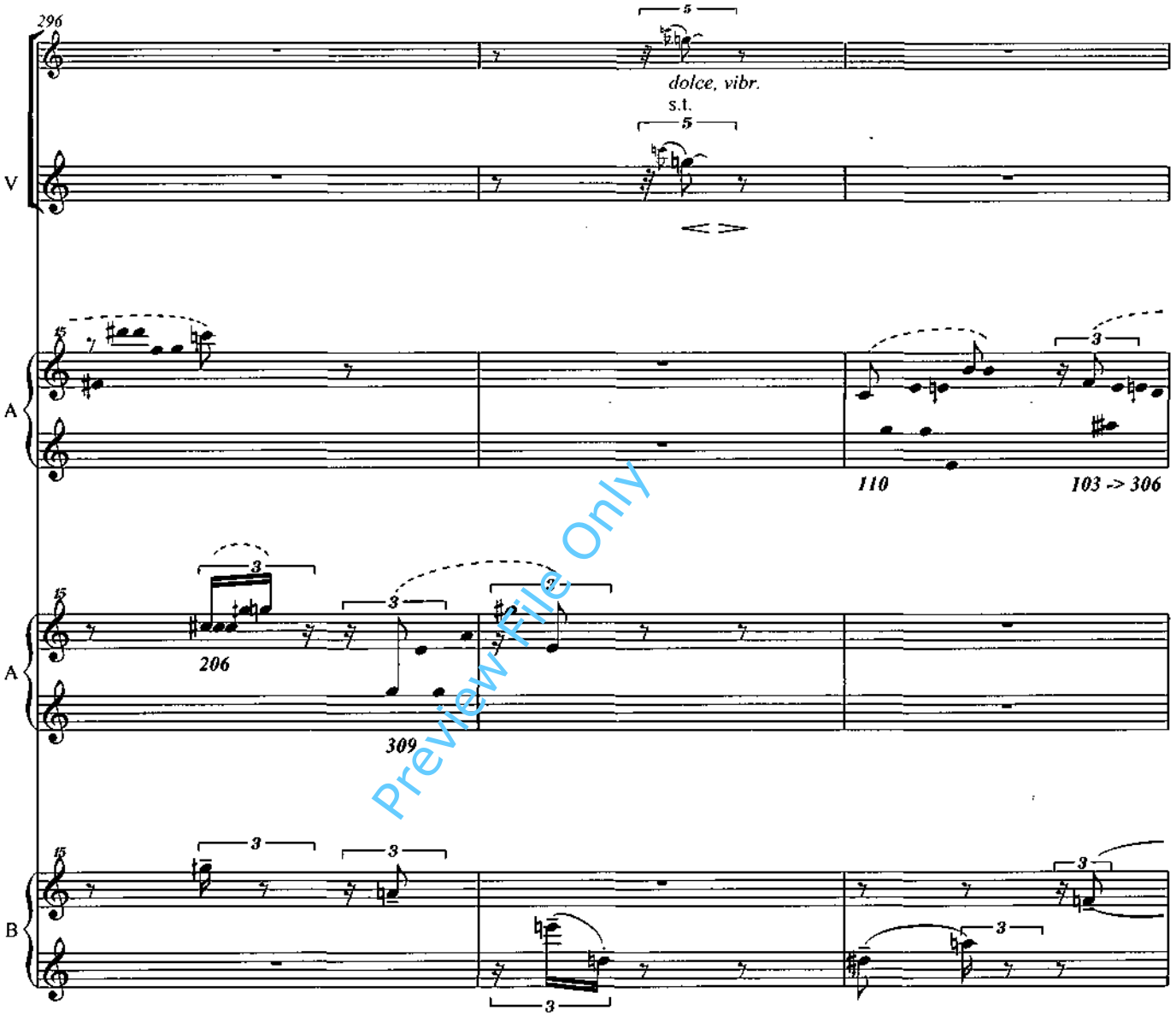

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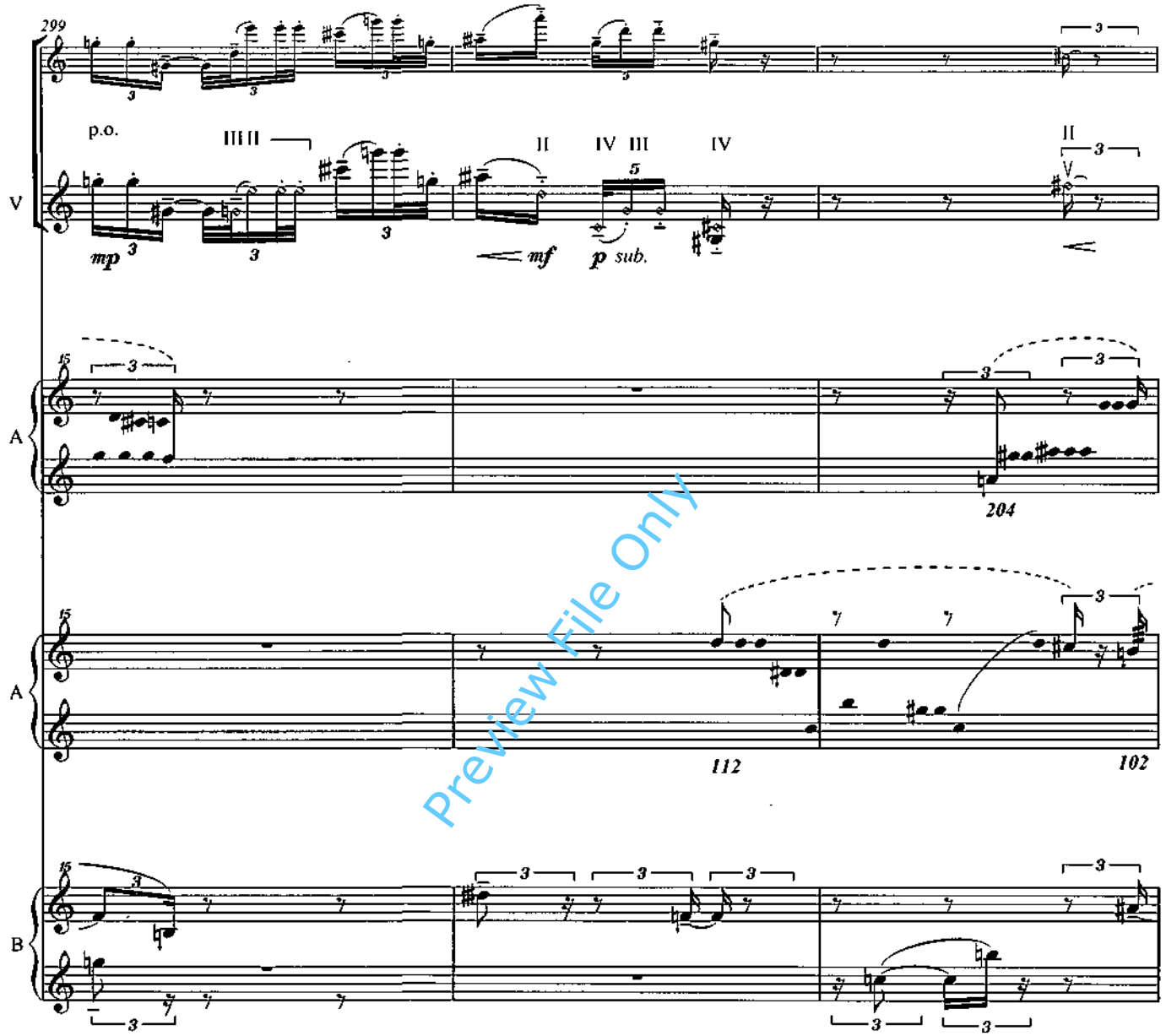

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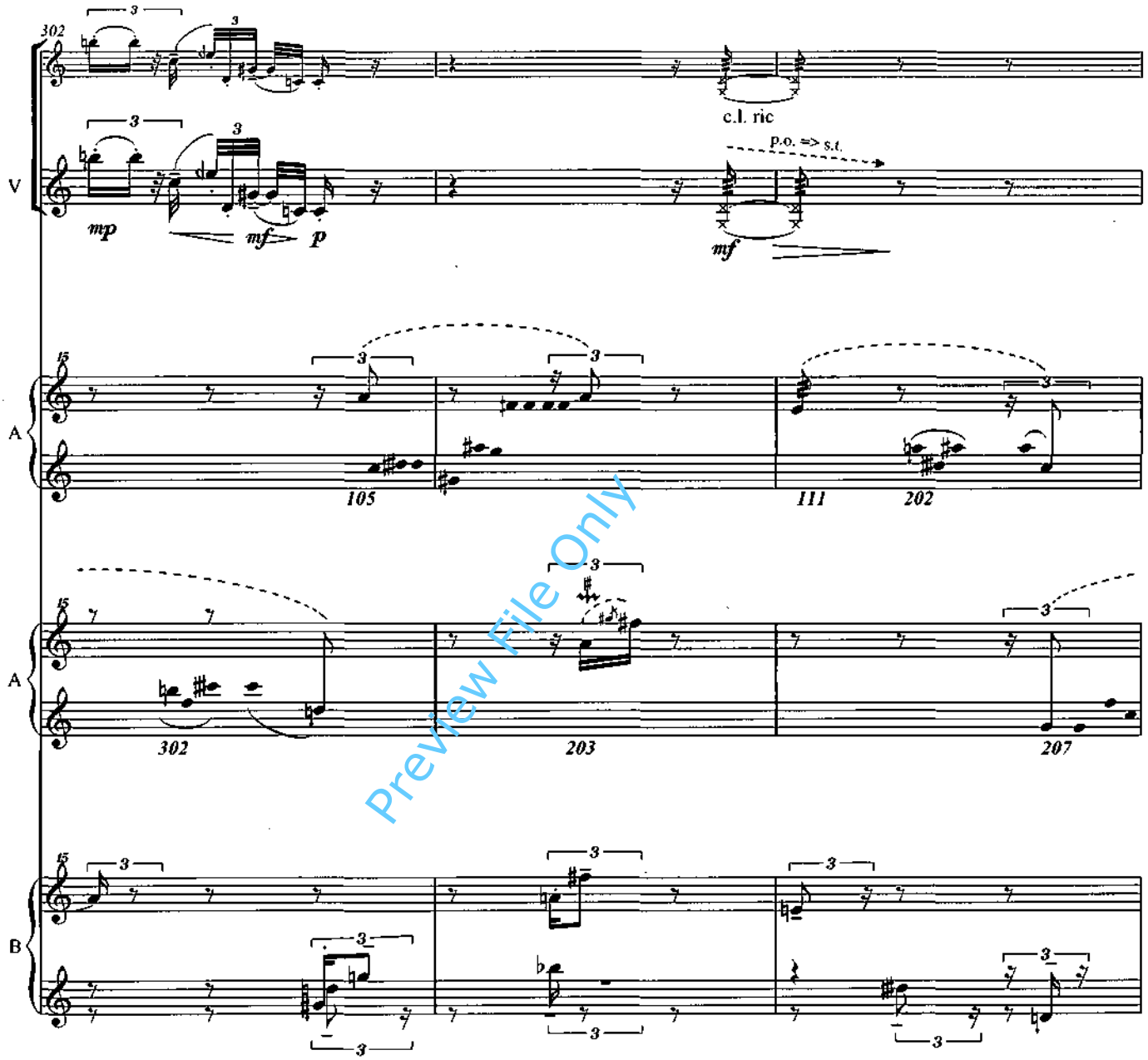

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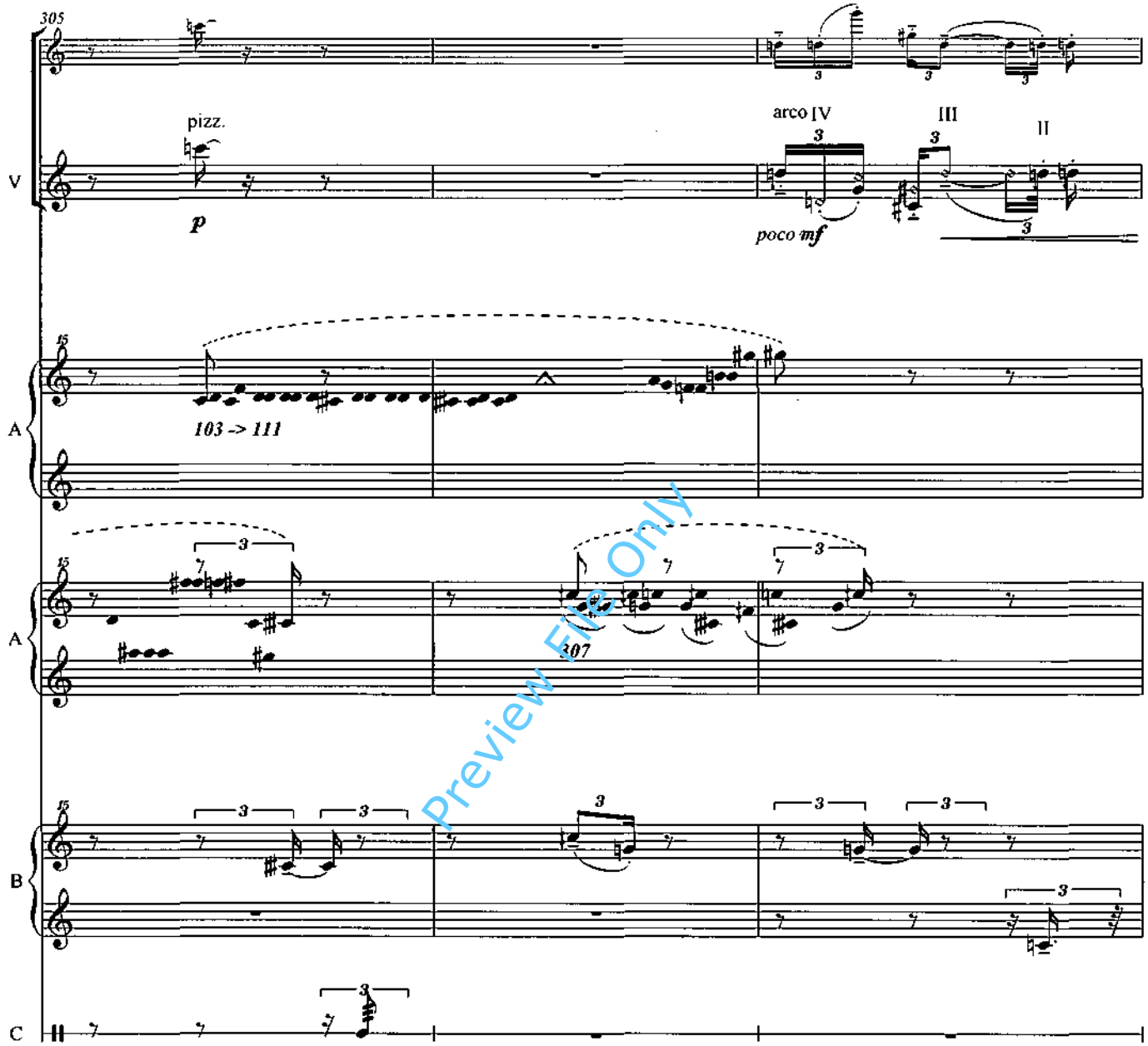

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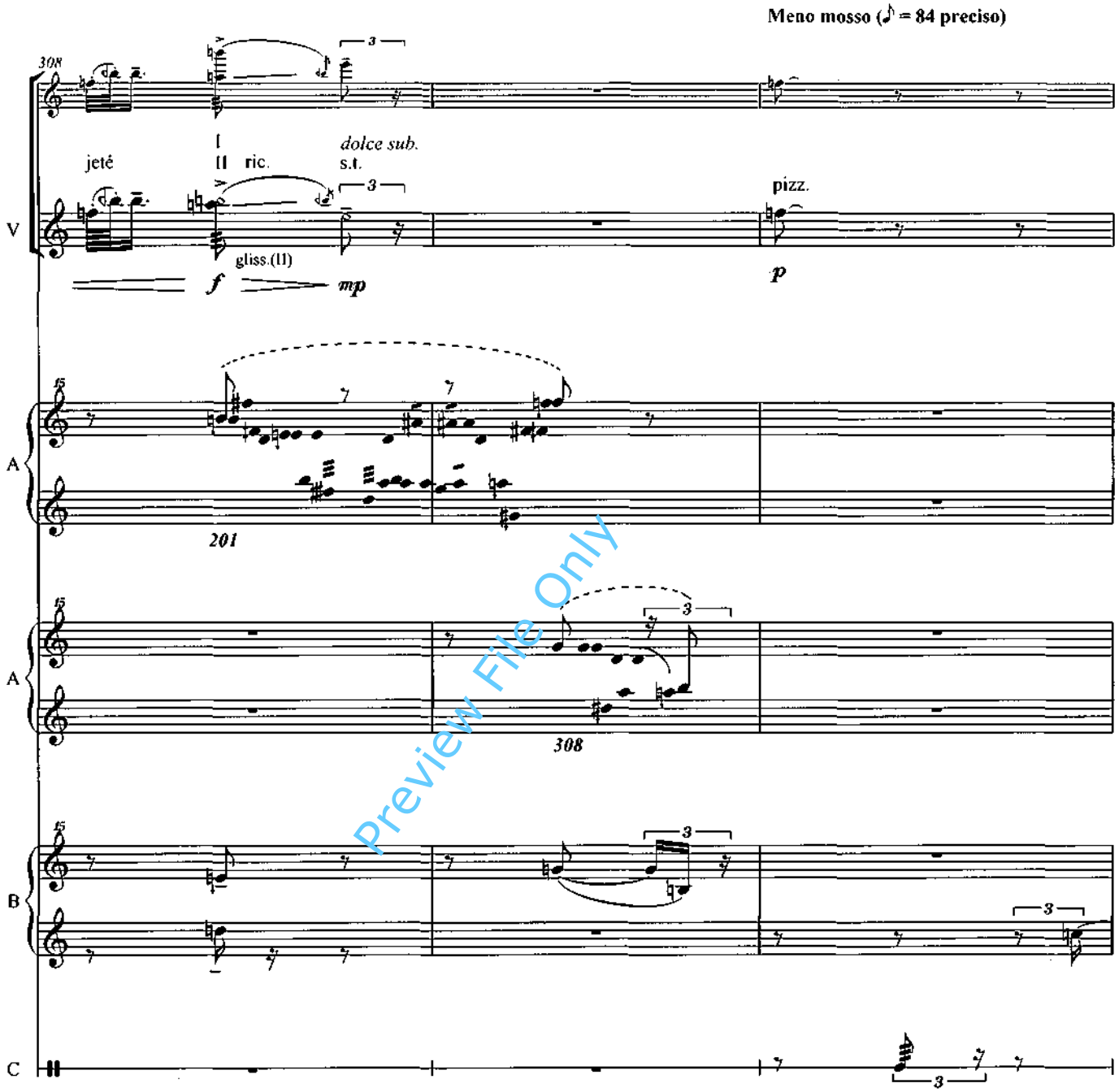

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