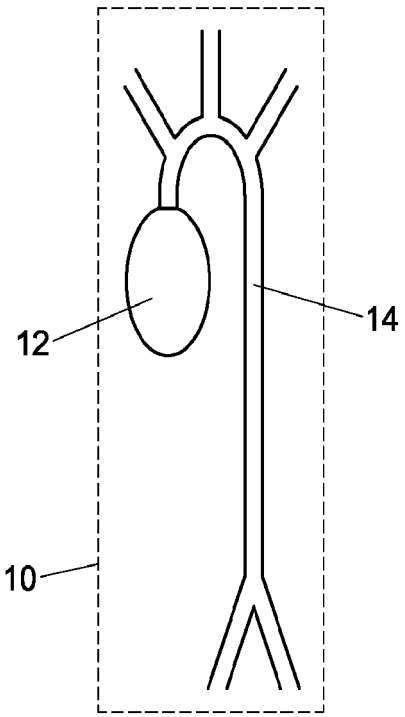


Fig. 1A

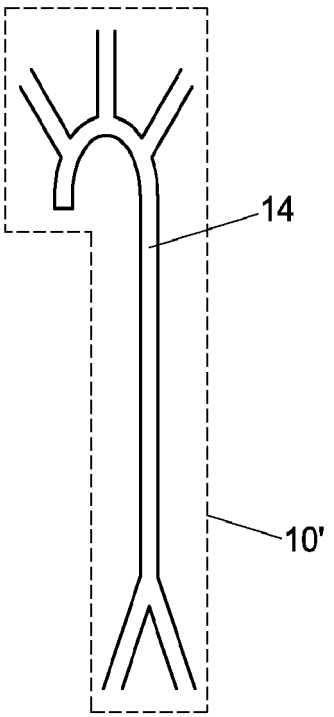


Fig. 1B

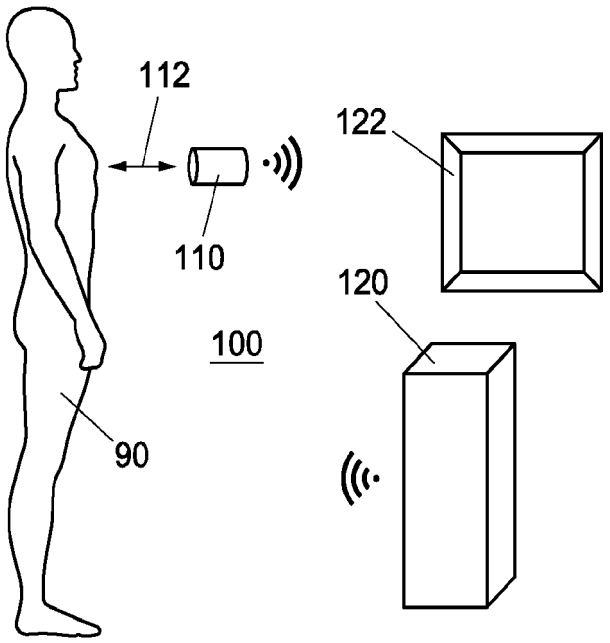


Fig. 2A

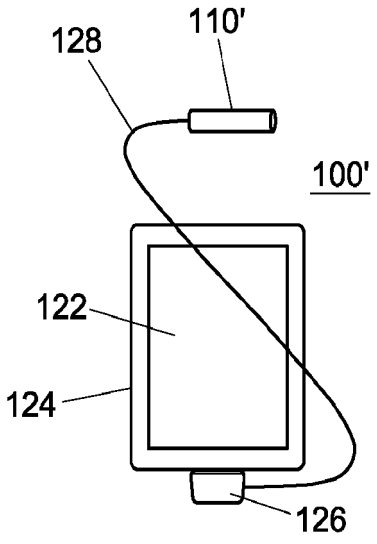
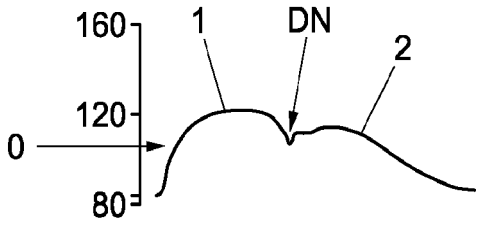


Fig. 2B



ω_1=98.4 bmp; ω_2=98.4 bmp

Fig. 3A



ω_1=112 bmp; ω_2=96 bmp

Fig. 3B



ω_1=100.8 bmp; ω_2=72 bmp

Fig. 4A



ω_1=98.4 bmp; ω_2=84 bmp

Fig. 4B



ω_1=100.8 bmp; ω_2=84 bmp

Fig. 4C



ω_1=100.8 bmp; ω_2=40.8 bmp

Fig. 5A



ω_1=136.8 bmp; ω_2=69.6 bmp

Fig. 5B

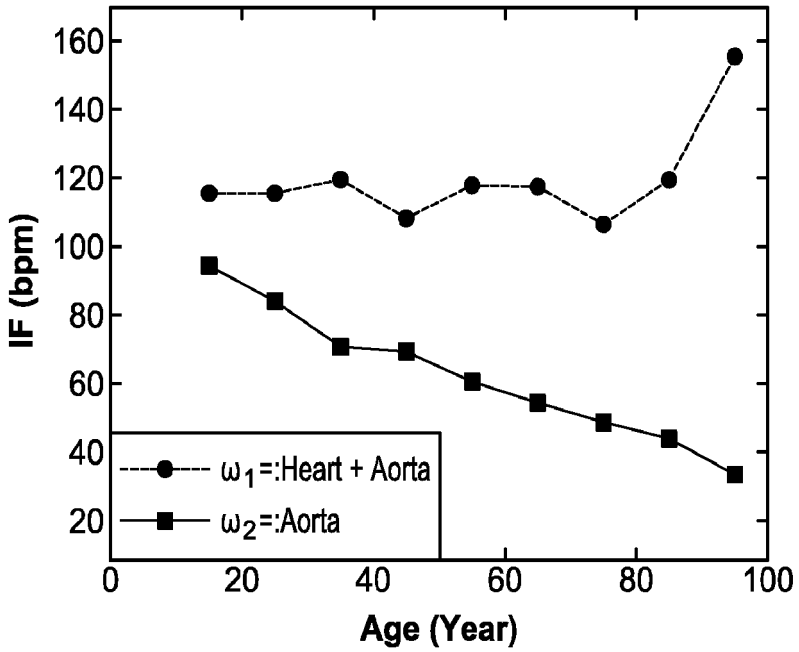

160
140
120
100
80
60
40
20
IF (bpm)
0
20
40
60
80
100
Age (Year)
ω1 =:Heart + Aorta
ω2 =:Aorta

Fig. 6A

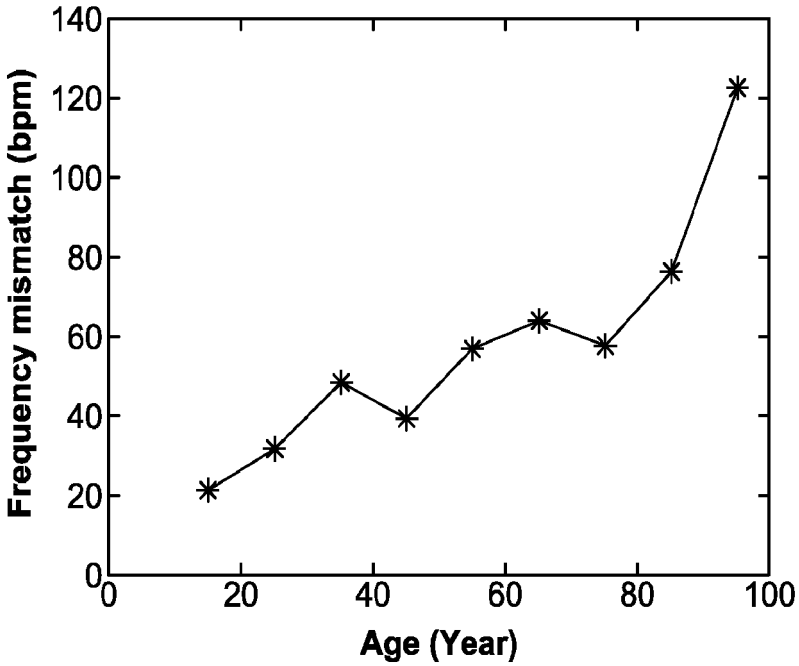

140
120
100
80
60
40
20
0
Frequency mismatch (bpm)
0
20
40
60
80
100
Age (Year)

Fig. 6B

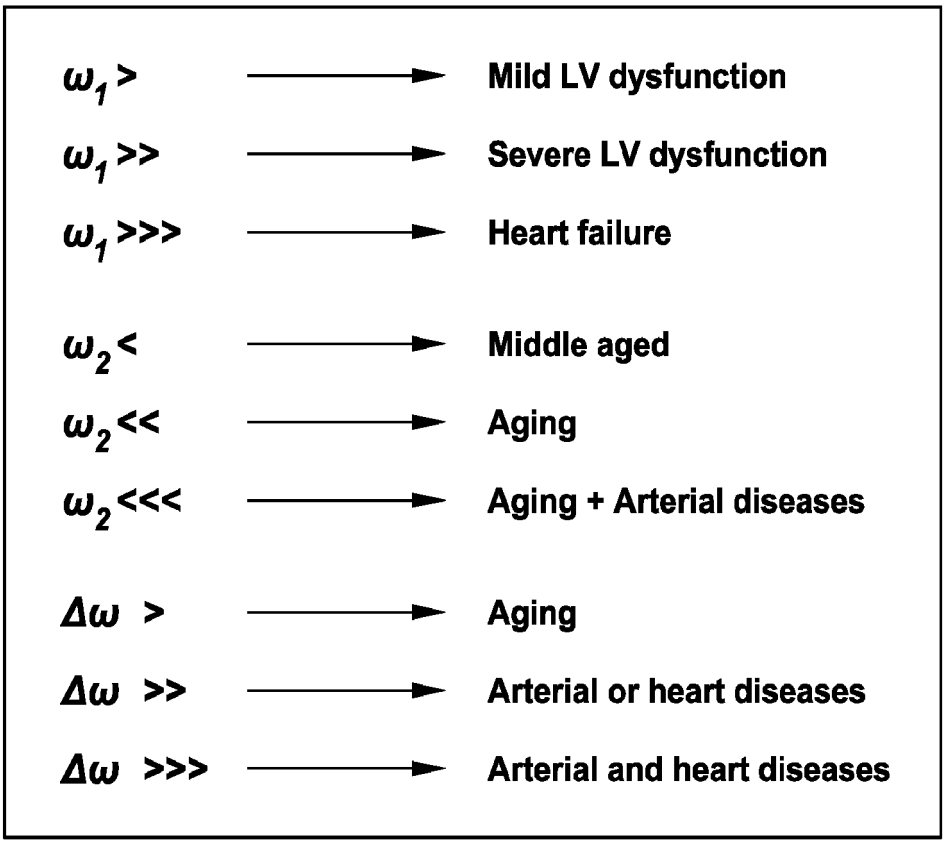

ω_1 > Mild LV dysfunction
ω_1 >> Severe LV dysfunction
ω_1 >>> Heart failure
ω_2 < Middle aged
ω_2 << Aging
ω_2 <<< Aging + Arterial diseases
$\Delta\omega$ > Aging
$\Delta\omega$ >> Arterial or heart diseases
$\Delta\omega$ >>> Arterial and heart diseases

Fig. 7

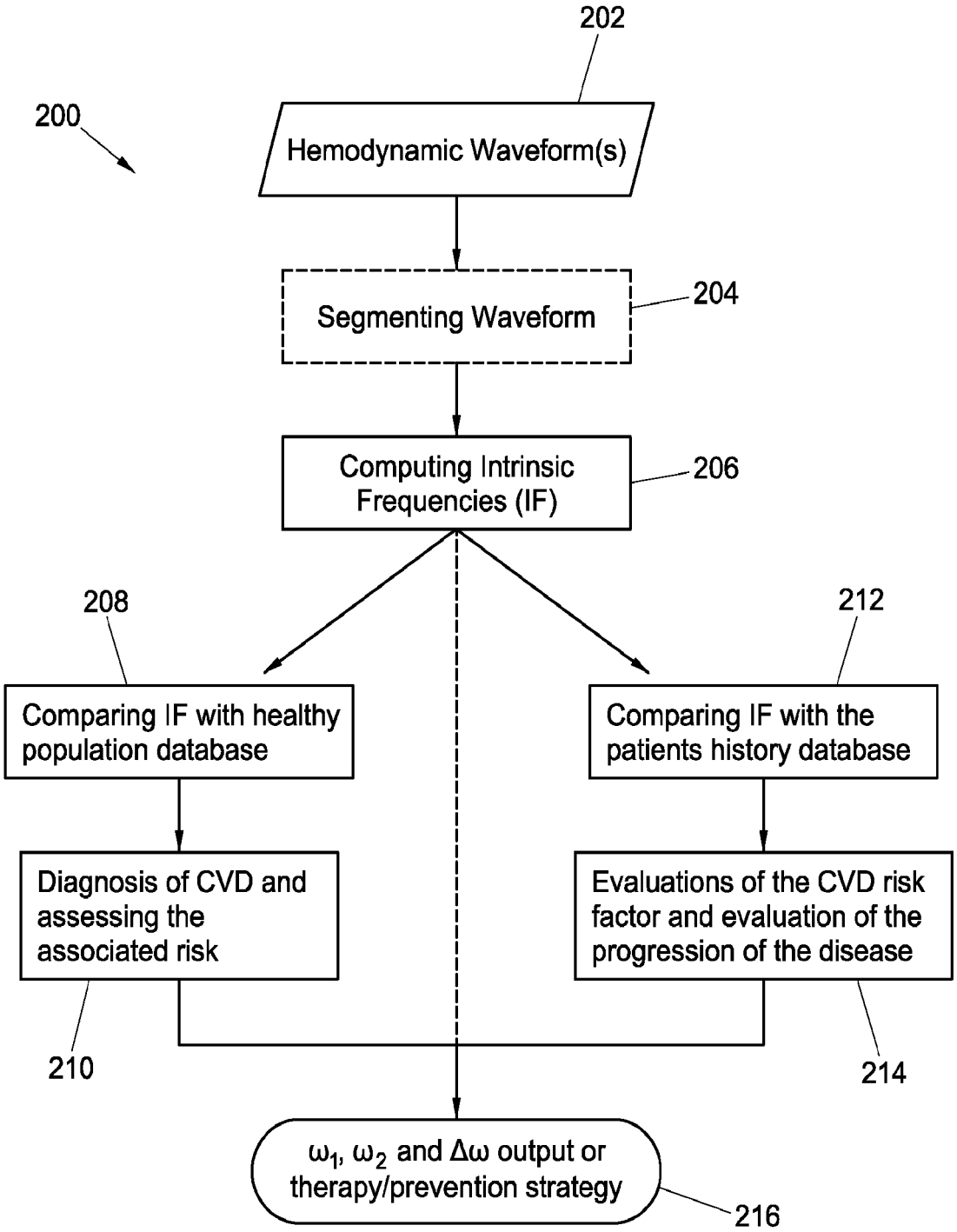

200
202
Hemodynamic Waveform(s)
Segmenting Waveform
204
Computing Intrinsic Frequencies (IF)
206
208
Comparing IF with healthy population database
212
Comparing IF with the patients history database
Diagnosis of CVD and assessing the associated risk
Evaluations of the CVD risk factor and evaluation of the progression of the disease
210
214
ω1, ω2 and Δω output or therapy/prevention strategy
216

Fig. 8

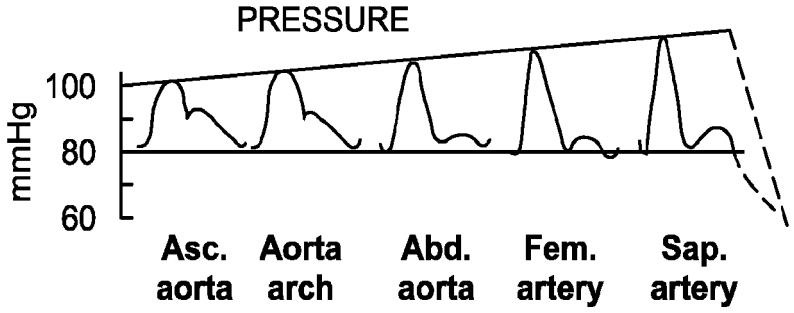


Fig. 9A

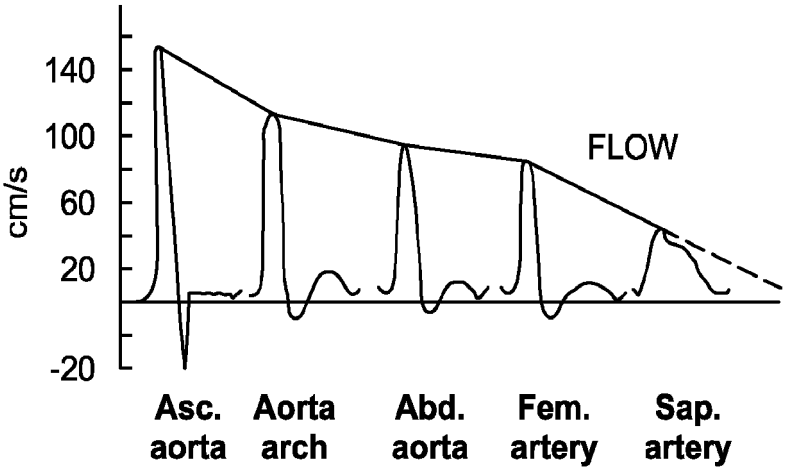


Fig. 9B

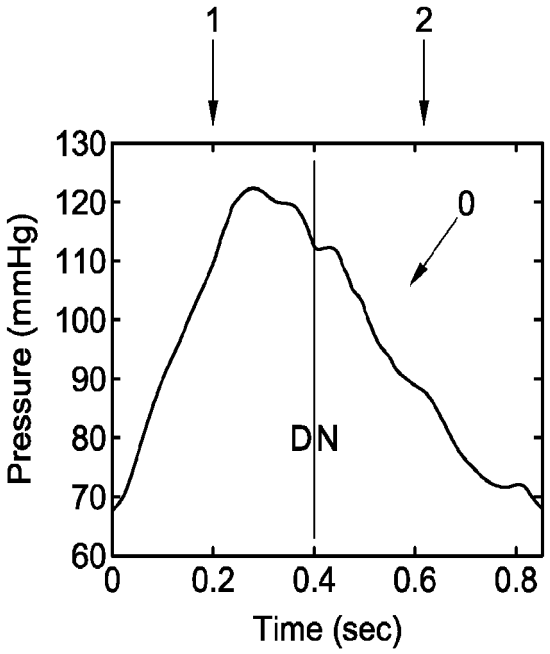


Fig. 10A

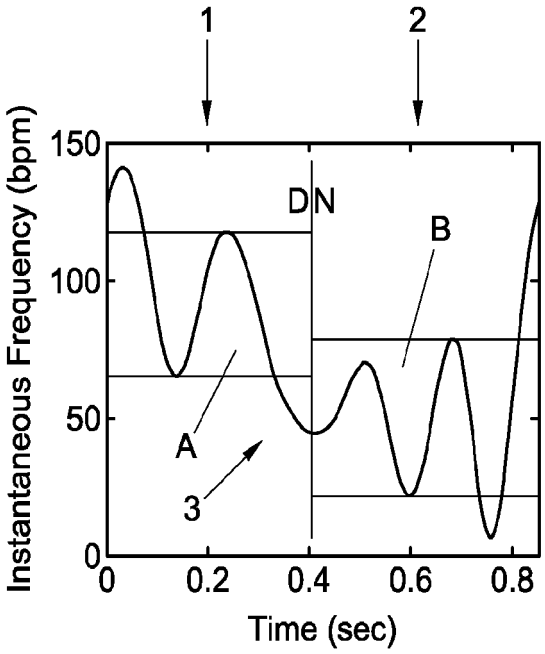


Fig. 10B

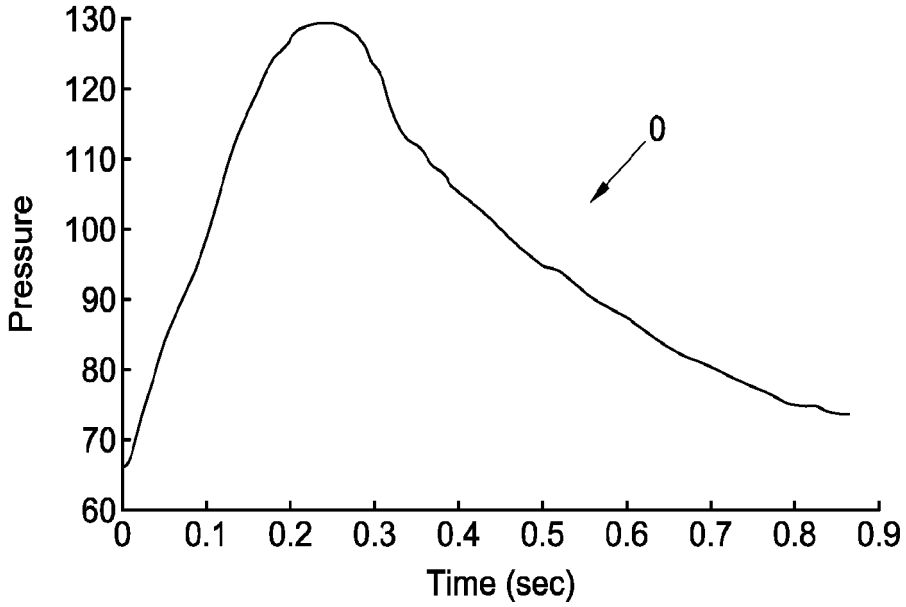


Fig. 11A

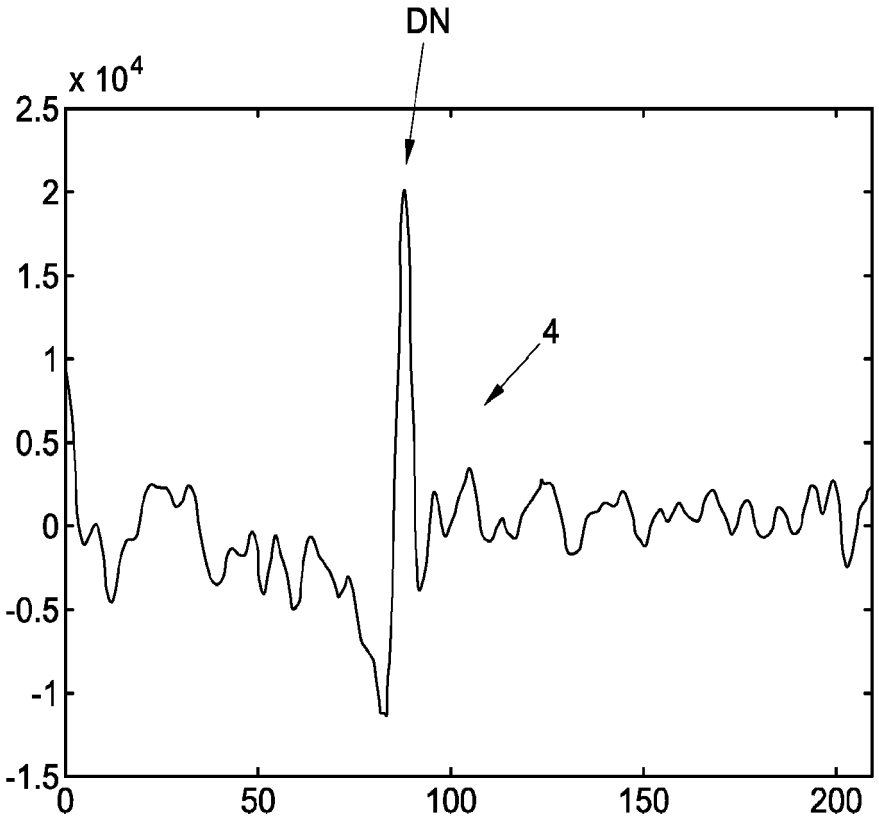


Fig. 11B

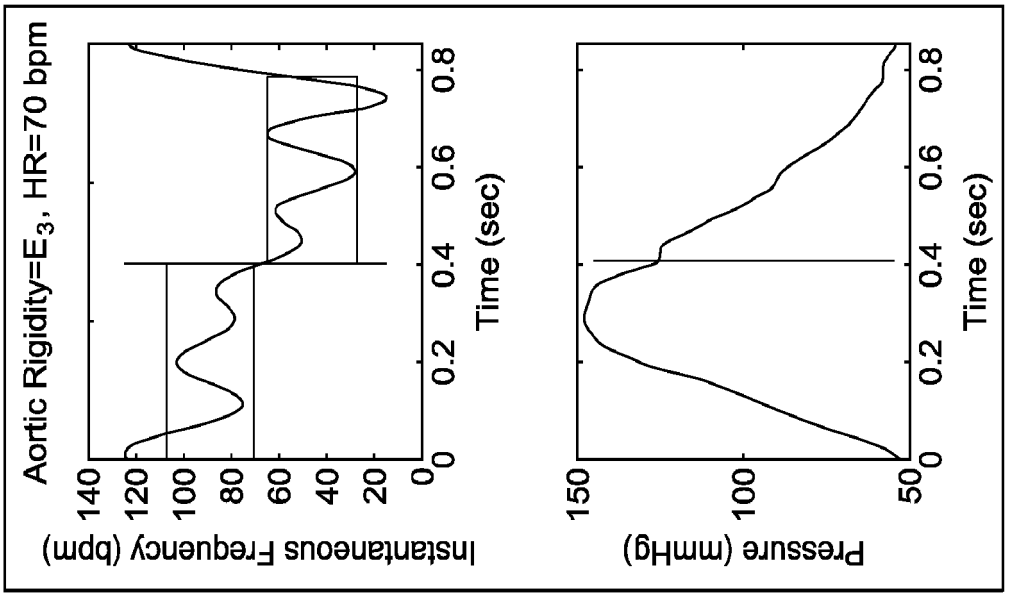


Fig. 12C

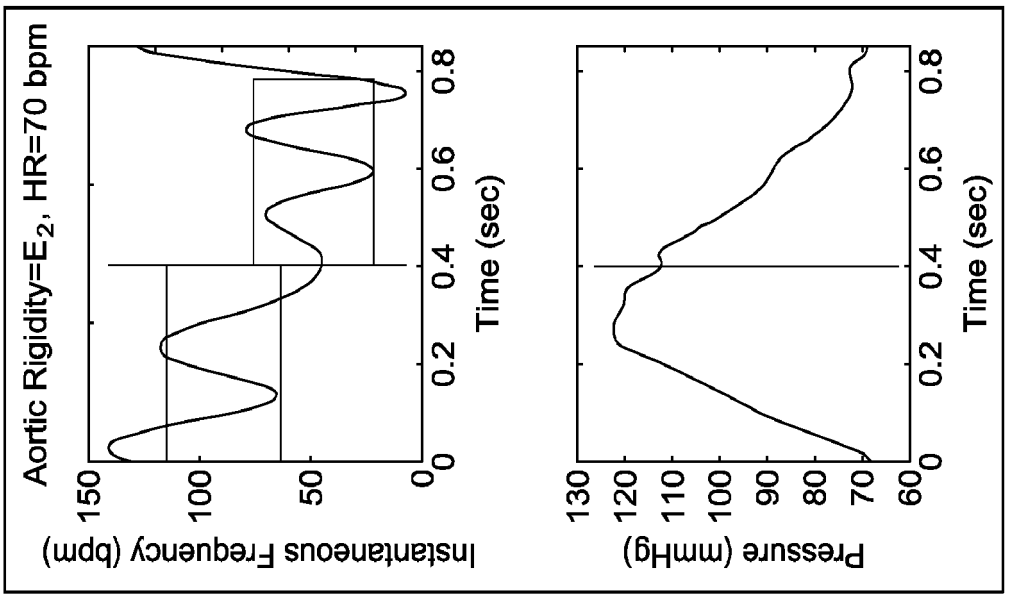


Fig. 12B

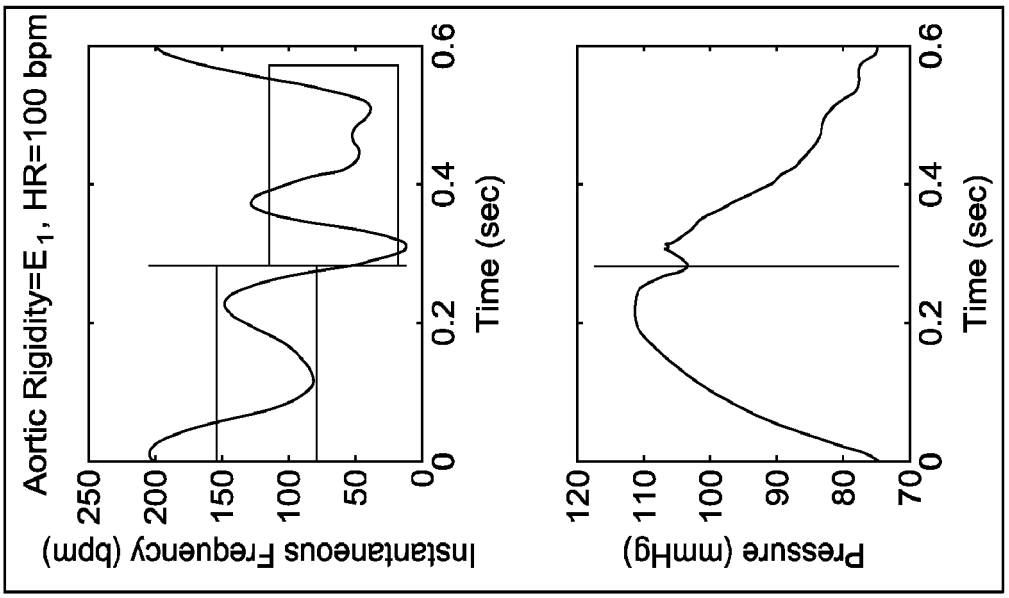


Fig. 12A

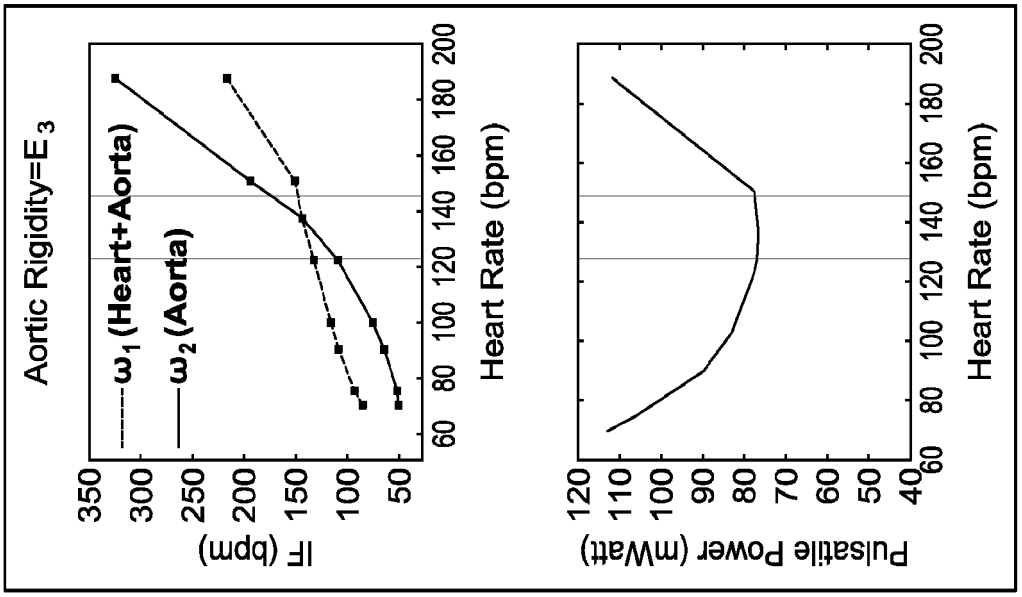


Fig. 13C

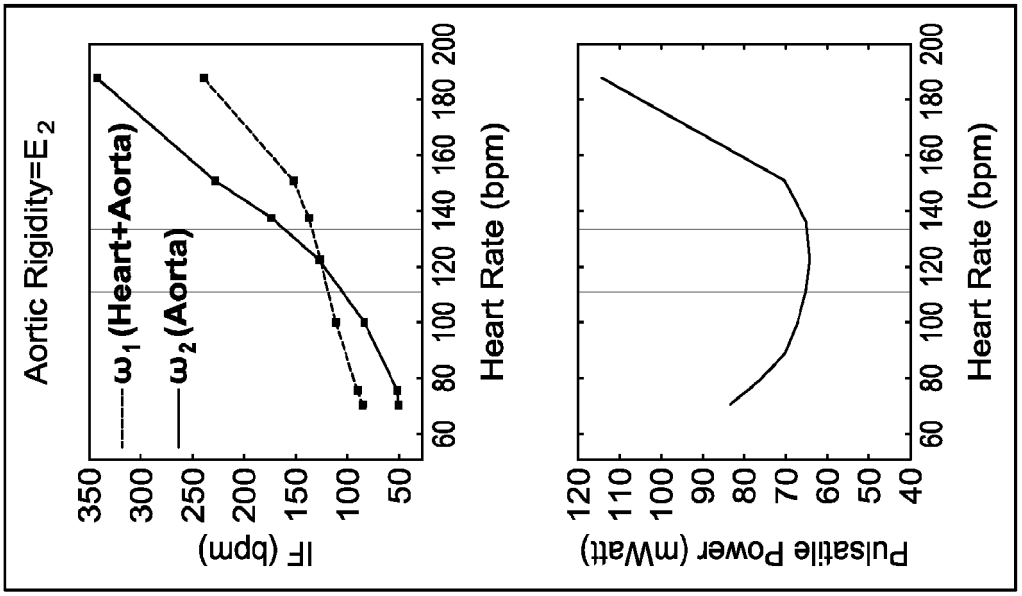


Fig. 13B

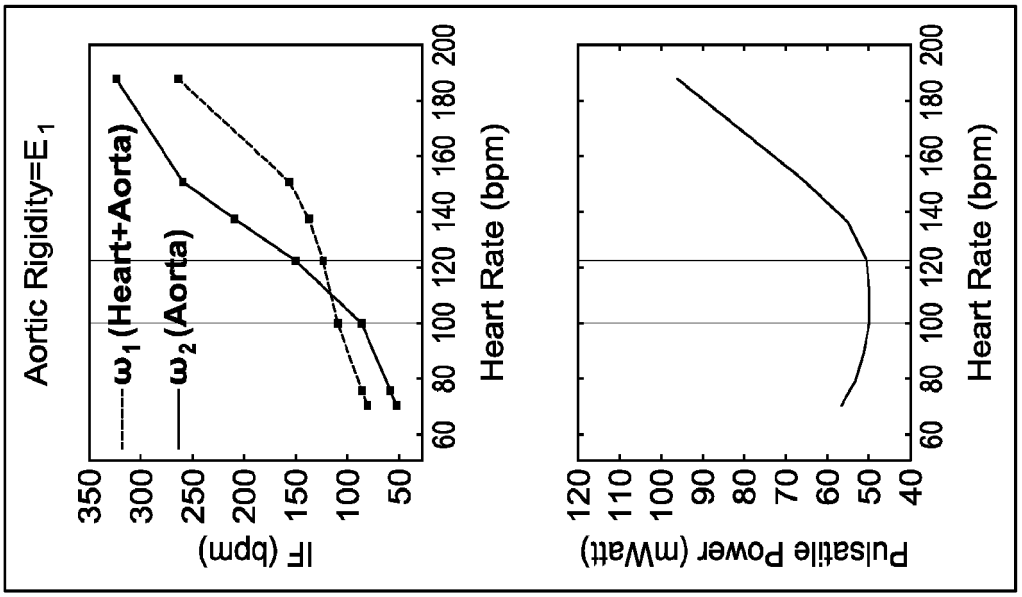


Fig. 13A

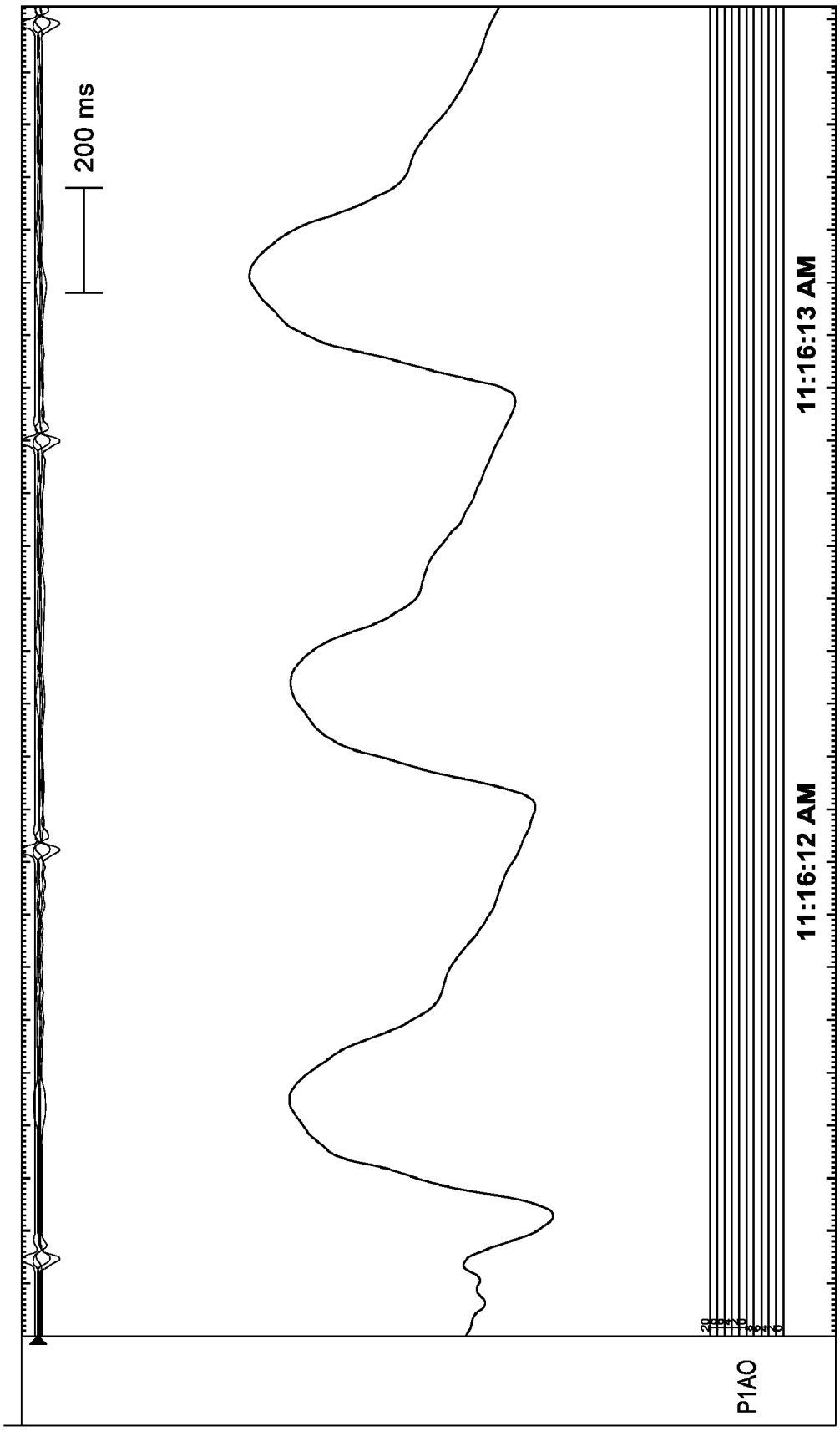


Fig. 14A

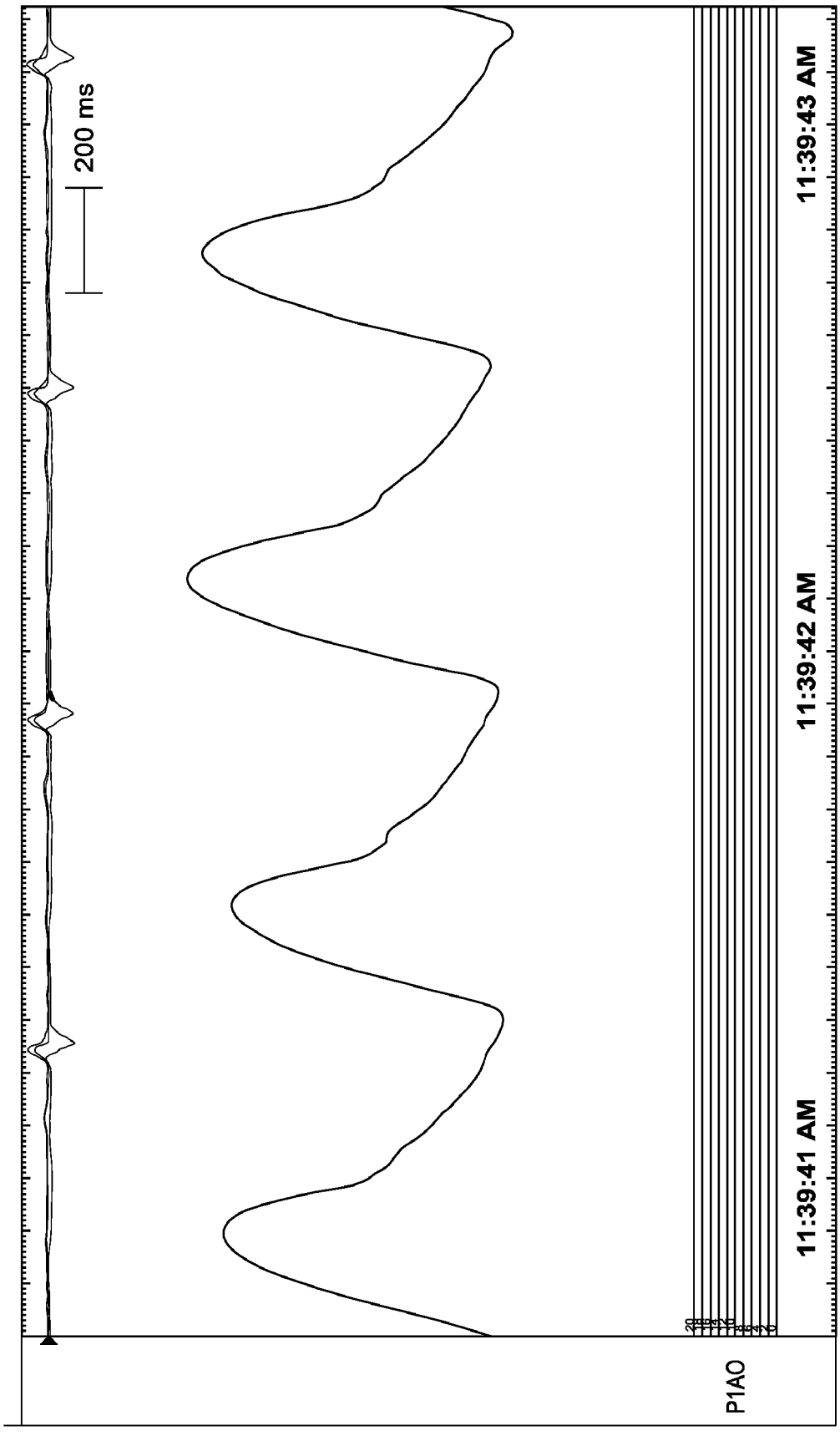


Fig. 14B

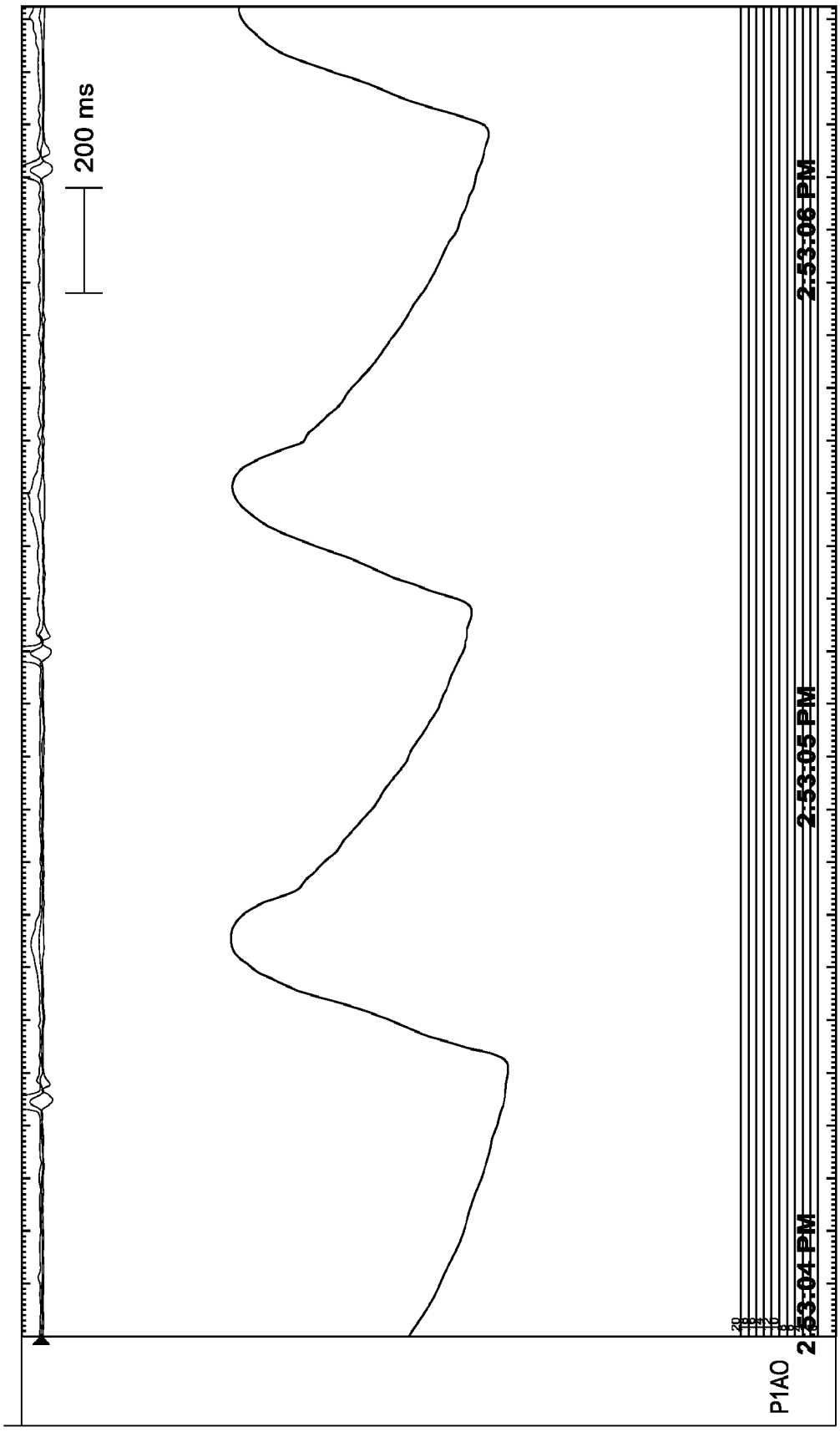


Fig. 14C