Cardiology Stethoscope

TSphonette

Guidance

Rev.1.0

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Product Outline

“ONLY ONE” stethoscope

produced with Clinical × Engineering

(Dr. Takashina) (Dr. Shimizu)

1）The world’s first !!

Wide Range & Powerful Sound

By using “Extensible Diaphragm”

2）Ear friendly design such as Movable Ear Piece and Movable Binaural

3）Chest Piece and Binaural are made of Stainless-steel

4）**High Grade Model** and **Standard Model** are carried

TSphonette *Grande* No.182

High grade model

Black
Burgundy
Dark Navy

・CHP & Binaural with mirror finish
・Two In One Tube
・Molded Outer Spring (10 years warranty for broken spring)

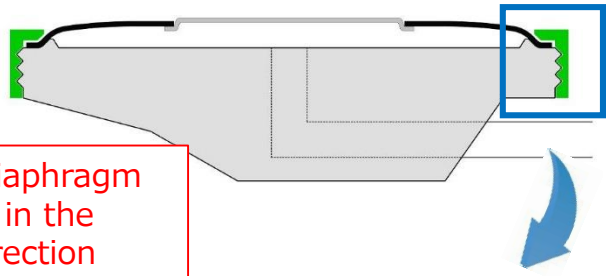
TSphonette No.132

Standard Model

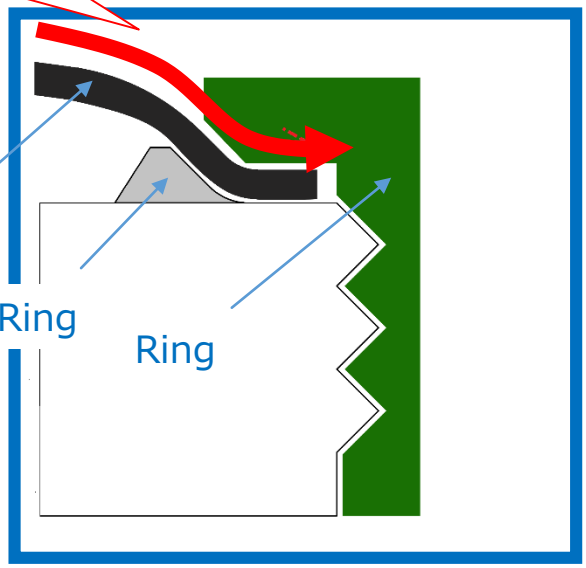
Black
Burgundy
Dark Navy

・CHP with mat finish
・Single Tube
・Inner Spring

What is Extensible Diaphragm ?



Elastic diaphragm expands in the radial direction

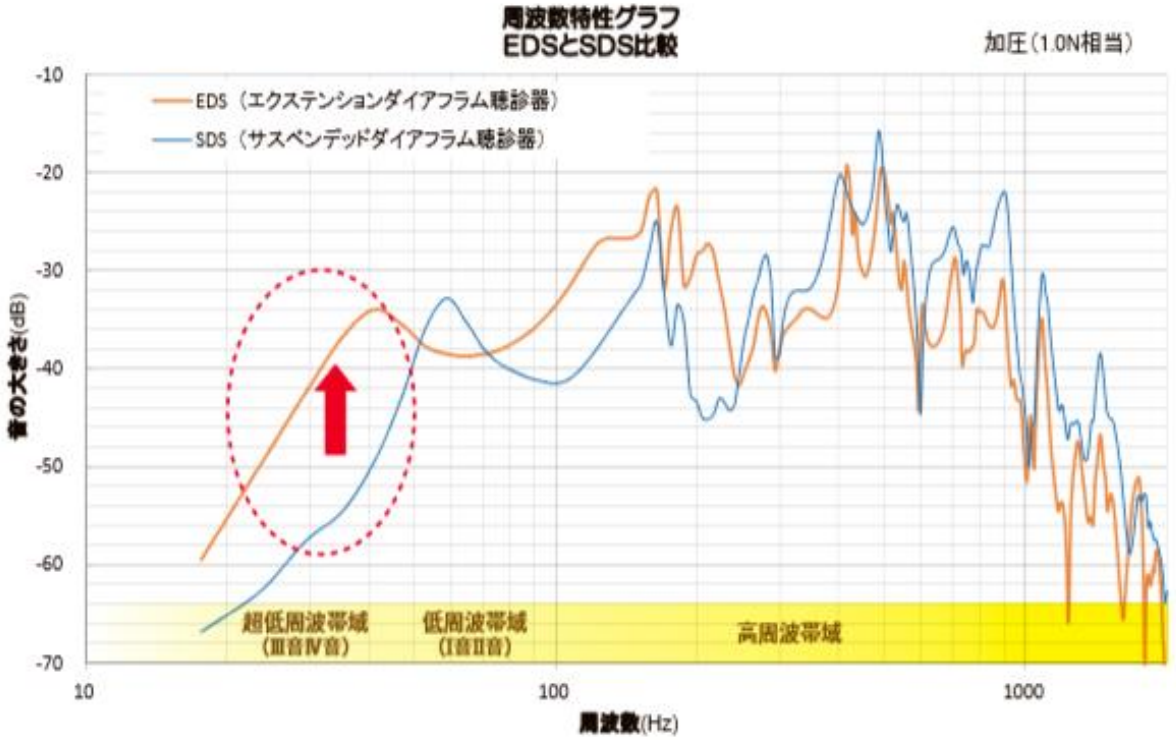


Wide range **and** **Powerful sound** are generated by transducing repulsion which generate by stretching tight of this elastic diaphragm into sound energy.

※The conventional diaphragm simply uses the vibration characteristics of resin.

The extension diaphragm consists of an extensible elastic membrane part and a highly rigid transparent film part. When the diaphragm is fixed with a ring, the inner ring provided inside the chest piece causes the diaphragm to extend radially over the entire circumference.

Comparison of Frequency Characteristics

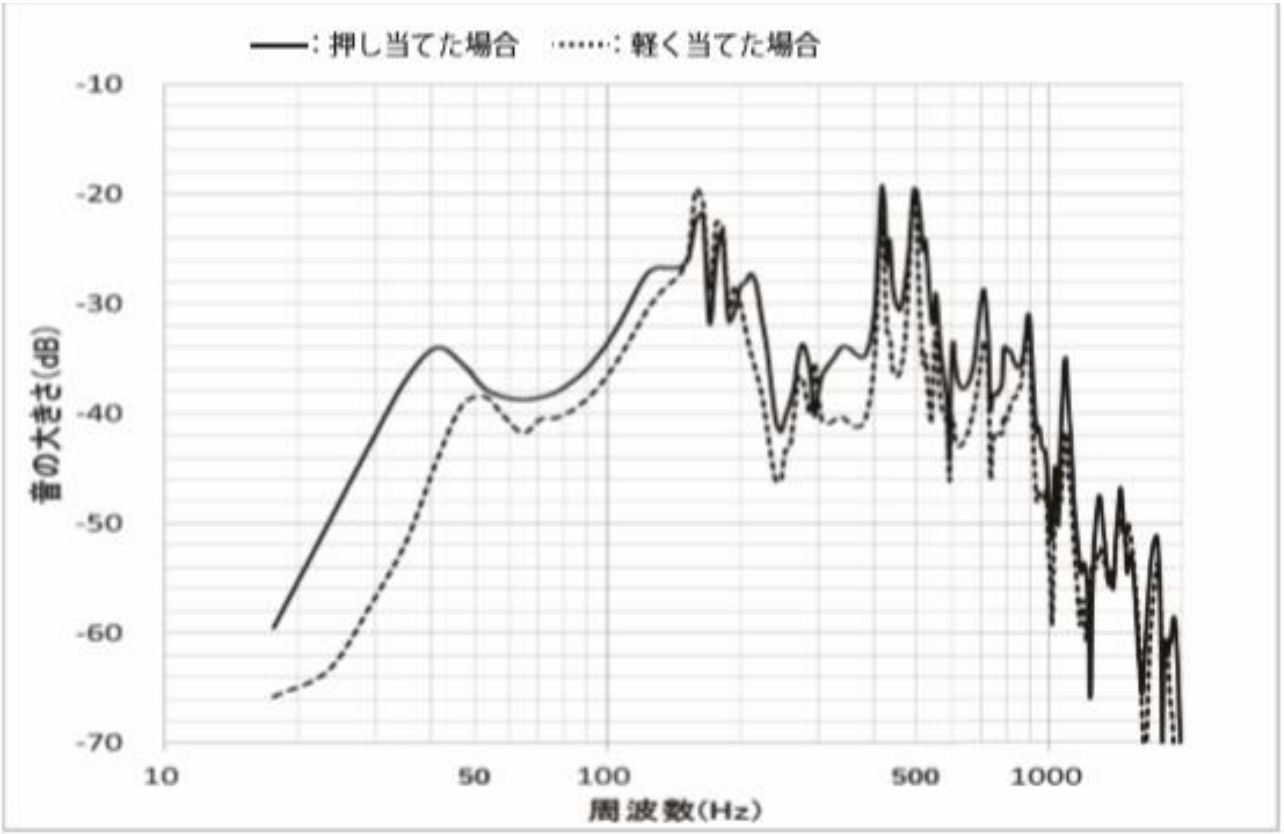


The above chart shows comparison of frequency characteristics of SDS and EDS. You can see that the low frequency sound can be heard more clearly with EDS than with SDS.
It is particularly useful for cardiovascular diagnosis because even heart murmur in super low frequency range, such as grade III or IV, can be heard clearly.

How to use（How to press the chest piece）

When pressing the diaphragm lightly into a chest, Every sounds from in high frequency to low frequency are heard in a balanced manner. When pressing more firmly, low frequency sound will be intensified and you can hear every sounds more strongly and even heart murmur Grade III and IV can be heard clearly.

※By changing the pressing force, the elastic membrane part expands and this make frequency characteristics change.



A paper was published

Japanese Circulation Society official publication

『**Circulation Journal** vol.80 No.9 September2016 (P.2047-P.2049) 』

RAPID COMMUNICATION

New Stethoscope With Extensible Diaphragm

Tsunekazu Takashina, MD, PhD; Masashi Shimizu, PhD; Tetsuko Muranaka, BSc; Syoichi Miyazumi, BSc

Outline

"This study compared the diagnostic efficacy of the common suspended diaphragm stethoscope (SDS) with a new extensible diaphragm stethoscope (EDS) for low-frequency heart sounds.

Based on the results of the sound analysis, the EDS is more efficient than the SDS."

Developer;

Dr. Tsunekazu Takashina Head Director, Japan Educational Clinical Cardiology Society

Dr. Masashi Shimizu emeritus professor, Tokyo Institute of Technology

Ear Friendly Design

Selectable Ear Piece

You can use your favorite one

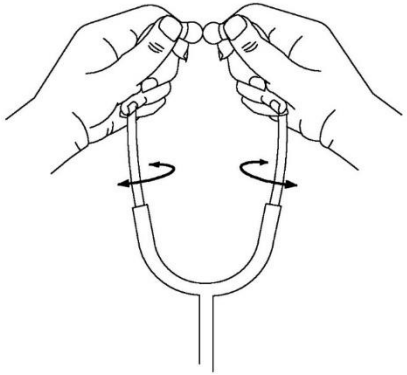
Movable Soft Ear Piece

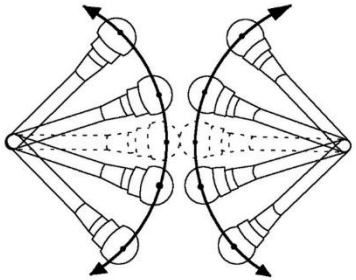
Sealing Ear Piece

Ear Piece Hard type

Movable Binaural

You can adjust to
your comfortable angle





Tough spring of moderate pressure

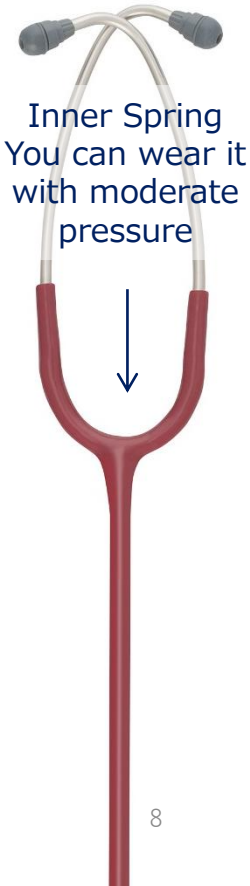
You can wear it without ear pain.

No.182

Molded Outer Spring
Pressure of spring is adjustable.
10 year warranty for broken spring

No.132

Inner Spring
You can wear it with moderate pressure



High Grade Model & Standard Model

※Chest piece and Binaural of both model are made of stainless-steel which have better acoustic propert

(Mainly for doctors)

High Grade Model

TSphonette *Grande* No.182

Binaural
Mirror finish with premier feel
Made of stainless-steel

Molded Outer Spring
Pressure of spring is adjustable.
10 year warranty for broken spring

3 colors
・Black
・Burgundy
・Dark navy

Chest Piece（CHP）
Mirror finish with premier feel
Made of stainless-steel

Two In One Tube
For better acoustic property

(Mainly for nurses)

Standard Model

TSphonette No.132

Binaural
made of stainless-steel

Inner Spring
You can wear it with moderate pressure

3 colors
・Black
・Burgundy
・Dark navy

Chest Piece（CHP）
Mat finish by special polishing
Made of stainless-steel

Single Tube

High Grade Model & Standard Model

	High Grade Model	Standard Model
Product Name	**Tsphonette Grande No.182**	**TSphonette No.132**
User	Mainly doctors	Mainly nurse
Length	About 710㎜	About 710㎜
Weight	About 230g	About 160 g
Diaphragm	Φ52㎜	Φ52㎜
Material(CHP/Binaural)	Stainless-steel	Stainless-steel
Finishing	Mirror finish (CHP/Binaural)	Mat finish (CHP)
Binaural, Spring	Φ6㎜・Molded outer spring	Φ5㎜・Inner spring
Tube	Two in one tube	Single tube
Color	Black, Burgundy, Dark Navy	Black, Burgundy, Dark Navy
Warranty	One year (10 years warranty for broken spring)	One year