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## Core silencers

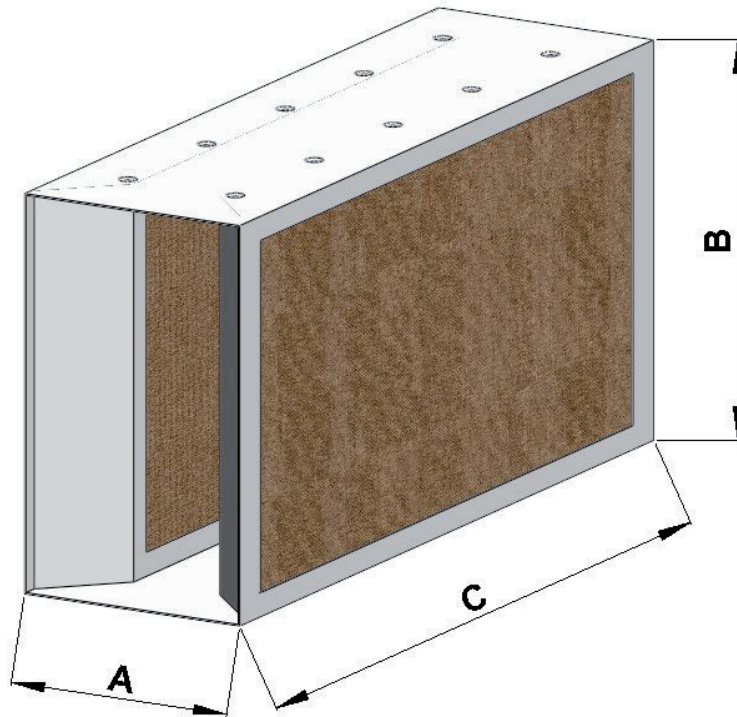
# JTHE



## Core Silencers

The core Silencer is suitable to be used within air conditioning ductwork, into structural openings or air handling equipment, wherever noise reduction is required. The cores are manufactured using galvanised sheet steel as a standard, have slide on flanges & achieves a low pressure loss with a low self-noise Lw.

- Standard cores are suitable for non-abrasive air mass up to maximum of 200 deg °C .
- Where required, cores can be suitable for hygienic processes with use of alternative materials (stainless steel).
- The wide range of dimensions available ensures that it can be used within most duct profiles, with the possibility of joining different sized units together, side by side or on top of each other. (However we would not recommend mixing different lengths).
- The Silencers can be fitted either horizontally or vertically or upright.
- Easy installation into ductwork.
- Ducting can be supplied along with the Silencer.



## TECHNICAL DATA – DIMENSIONS

| Type              | „A” *<br>[mm] | „B” *<br>[mm] | „C” *<br>[mm] | Weight<br>[kg] |
|-------------------|---------------|---------------|---------------|----------------|
| JTHE 200/300/1000 | 200           | 300           | 1000          | 7,2            |
| JTHE 200/300/1500 | 200           | 300           | 1500          | 9,7            |
| JTHE 200/300/2000 | 200           | 300           | 2000          | 12,3           |
| JTHE 250/300/1000 | 250           | 300           | 1000          | 8,3            |
| JTHE 250/300/1500 | 250           | 300           | 1500          | 11,5           |
| JTHE 250/300/2000 | 250           | 300           | 2000          | 14,6           |
| JTHE 300/300/1000 | 300           | 300           | 1000          | 8,7            |
| JTHE 300/300/1500 | 300           | 300           | 1500          | 12,0           |
| JTHE 300/300/2000 | 300           | 300           | 2000          | 15,3           |
| JTHE 400/300/1000 | 400           | 300           | 1000          | 10,0           |
| JTHE 400/300/1500 | 400           | 300           | 1500          | 13,9           |
| JTHE 400/300/2000 | 400           | 300           | 2000          | 17,9           |

\* - production dimensions are in reality about 3mm smaller than the ordered dimensions due to easy installation into the ductworks; that means JTH 400/300 – real dimensions 397/297mm.

| Type              | „A” *<br>[mm] | „B” *<br>[mm] | „C” *<br>[mm] | Weight<br>[kg] |
|-------------------|---------------|---------------|---------------|----------------|
| JTHE 200/500/1000 | 200           | 500           | 1000          | 10,3           |
| JTHE 200/500/1500 | 200           | 500           | 1500          | 13,7           |
| JTHE 200/500/2000 | 200           | 500           | 2000          | 17,1           |
| JTHE 250/500/1000 | 250           | 500           | 1000          | 11,9           |
| JTHE 250/500/1500 | 250           | 500           | 1500          | 16,1           |
| JTHE 250/500/2000 | 250           | 500           | 2000          | 20,3           |
| JTHE 300/500/1000 | 300           | 500           | 1000          | 12,3           |
| JTHE 300/500/1500 | 300           | 500           | 1500          | 16,6           |
| JTHE 300/500/2000 | 300           | 500           | 2000          | 21,0           |
| JTHE 400/500/1000 | 400           | 500           | 1000          | 13,8           |
| JTHE 400/500/1500 | 400           | 500           | 1500          | 17,9           |
| JTHE 400/500/2000 | 400           | 500           | 2000          | 24,0           |
| JTHE 500/500/1000 | 500           | 500           | 1000          | 15,5           |
| JTHE 500/500/1500 | 500           | 500           | 1500          | 21,5           |
| JTH 500/500/2000  | 500           | 500           | 2000          | 27,5           |

## ACOUSTIC DATA

| Silencer type     | Silencer attenuation JTHE – in frequencies [dB] |       |        |        |        |         |         |         |         |             | Pressure loss coefficient |
|-------------------|---|-------|--------|--------|--------|---------|---------|---------|---------|-------------|---------------------------|
|                   | 32 Hz   | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | TOT Hz      | $\xi$                     |
| JTHE 200/300/1000 | 6,9   | 6,6   | 6,3    | 12,6   | 25,9   | 30,5    | 21,2    | 16,2    | 15,6    | <b>32,4</b> | 2,8                       |
| JTHE 200/300/1500 | 4,14  | 7,1   | 10,1   | 16,9   | 35,9   | 34,8    | 25      | 19,9    | 19      | <b>38,8</b> | 3,3                       |
| JTHE 200/300/2000 | 10,2  | 11,0  | 11,8   | 20,8   | 41,9   | 38,7    | 28,4    | 22,6    | 19,9    | <b>43,8</b> | 3,64                      |
| JTHE 250/300/1000 | 7,67  | 7,8   | 8,03   | 13,6   | 30     | 30,2    | 22,2    | 16,3    | 14,2    | <b>33,7</b> | 3,0                       |
| JTHE 250/300/1500 | 5,94  | 7,8   | 9,59   | 19,4   | 34,2   | 32,5    | 25      | 20,1    | 17,2    | <b>37,0</b> | 3,54                      |
| JTHE 250/300/2000 | 1,41  | 6,6   | 11,7   | 23,3   | 35,2   | 29,6    | 26      | 22,4    | 20,1    | <b>37,1</b> | 3,9                       |
| JTHE 300/300/1000 | 7,8   | 7,4   | 7,05   | 13,7   | 27,8   | 25,9    | 18,2    | 10,5    | 8,08    | <b>30,5</b> | 2,8                       |
| JTHE 300/300/1500 | 7   | 8,9   | 10,8   | 21,5   | 35,5   | 32      | 26      | 19,6    | 19,2    | <b>37,7</b> | 3,3                       |
| JTHE 300/300/2000 | 6,8   | 9,8   | 12,8   | 28     | 38,9   | 36,9    | 34,8    | 26      | 23,2    | <b>42,3</b> | 3,64                      |
| JTHE 400/300/1000 | 4,44  | 6,0   | 7,5    | 11,4   | 22,1   | 19      | 14,9    | 11,9    | 9,58    | <b>25,1</b> | 1,9                       |
| JTHE 400/300/1500 | 4,31  | 6,4   | 8,55   | 16,1   | 34,5   | 26,6    | 19,2    | 15,1    | 11,9    | <b>35,4</b> | 2,24                      |
| JTHE 400/300/2000 | 0,31  | 5,3   | 10,2   | 19,6   | 38,3   | 35,8    | 23,9    | 17,9    | 13,8    | <b>40,4</b> | 2,47                      |

| Silencer type     | Silencer attenuation JTHE – in frequencies [dB] |       |        |        |        |         |         |         |         |             | Pressure loss coefficient |
|-------------------|---|-------|--------|--------|--------|---------|---------|---------|---------|-------------|---------------------------|
|                   | 32 Hz   | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz | TOT Hz      | $\xi$                     |
| JTHE 200/500/1000 | 4,08  | 5,8   | 7,44   | 14,1   | 26,3   | 35,2    | 24,6    | 20,8    | 17,8    | <b>36,3</b> | 2,8                       |
| JTHE 200/500/1500 | 6,88  | 8,3   | 9,64   | 18,1   | 36     | 37      | 35,5    | 29,7    | 25,4    | <b>41,4</b> | 3,3                       |
| JTHE 200/500/2000 | 3,97  | 7,5   | 11     | 23,4   | 39     | 37,1    | 35,2    | 30,7    | 23,5    | <b>42,6</b> | 3,64                      |
| JTHE 250/500/1000 | 5,76  | 6,9   | 8,06   | 13,8   | 30,8   | 33,2    | 24      | 18,7    | 16,3    | <b>35,7</b> | 3,0                       |
| JTHE 250/500/1500 | 6,81  | 8,9   | 11     | 18,4   | 35,7   | 37,7    | 29,7    | 20,2    | 18,8    | <b>40,3</b> | 3,54                      |
| JTHE 250/500/2000 | 8,7   | 11,3  | 13,9   | 24,6   | 39,3   | 35,4    | 37,9    | 24,6    | 23,5    | <b>42,8</b> | 3,9                       |
| JTHE 300/500/1000 | 2,7   | 5,3   | 7,88   | 14,9   | 26,7   | 27      | 20      | 15,9    | 14,4    | <b>30,7</b> | 2,8                       |
| JTHE 300/500/1500 | 8,18  | 10,4  | 12,6   | 22,1   | 36     | 38,2    | 30,9    | 20,4    | 18,9    | <b>40,8</b> | 3,3                       |
| JTHE 300/500/2000 | 7,36  | 10,1  | 12,9   | 26,5   | 40,3   | 40,3    | 35,7    | 24,2    | 21,1    | <b>44,2</b> | 3,64                      |
| JTHE 400/500/1000 | 7,37  | 7,2   | 6,98   | 12,4   | 23,7   | 20,4    | 17,2    | 12,6    | 9,62    | <b>26,5</b> | 1,9                       |
| JTHE 400/500/1500 | 7,27  | 7,9   | 8,62   | 17,4   | 33,4   | 30,3    | 22,2    | 15,6    | 11,5    | <b>35,5</b> | 2,24                      |
| JTHE 400/500/2000 | 7,04  | 8,4   | 9,75   | 21,3   | 40,2   | 35,8    | 27,9    | 17,7    | 13,1    | <b>41,8</b> | 2,47                      |
| JTHE 500/500/1000 | 8,11  | 6,4   | 4,68   | 10,8   | 15,9   | 15,8    | 11,1    | 8,68    | 5,94    | <b>20,8</b> | 1,8                       |
| JTHE 500/500/1500 | 7,63  | 6,8   | 5,97   | 16,2   | 25,3   | 21,5    | 15,3    | 11,3    | 9,01    | <b>27,7</b> | 2,12                      |
| JTHE 500/500/2000 | 5,11  | 7,4   | 9,79   | 22,7   | 31,8   | 28,2    | 24,5    | 13,5    | 11,3    | <b>34,3</b> | 2,34                      |

\* - silencers' attenuation is valid for assembly in ductwork.

## SELF-NOISE OF SILENCER SOUND POWER $L_w$

Through the aerodynamic construction, quality processing of the core is the self-noise almost negligible for standard required falls of silencer proposal. We recommend while designing to use the selection program **AKUAIR**, where are all the relevant questions solved in details.

Self-noise with the velocity 4m/s = 24 dB(A), 6m/s = 38 dB(A)

## SILENCER PRESSURE LOSS

Silencer pressure loss is calculated as follows:

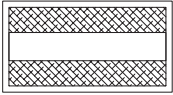
$$\Delta p = \rho \times 0,5 \times \xi \times v^2$$

$\rho$  - density of dry air [kg/m<sup>3</sup>]

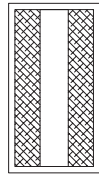
$\xi$  - pressure loss coefficient [see the tablet above]

V - air speed in ductwork A x B [m/s]

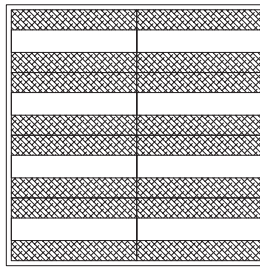
## POSITION OF SILENCERS IN DUCTWORKS OR IN STRUCTURAL OPENINGS



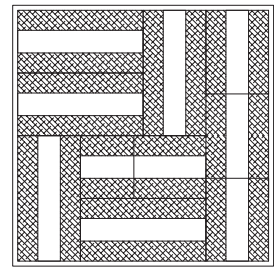
horizontal  
- single placement



vertical  
- single placement

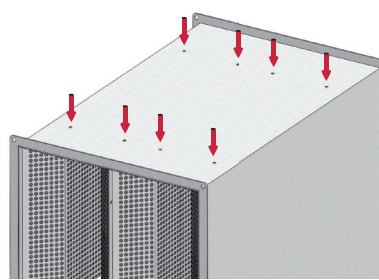
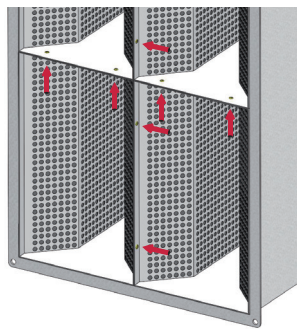
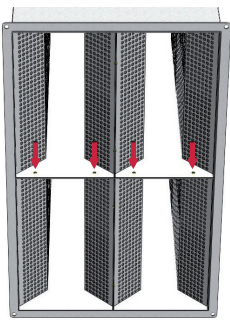


vertical or horizontal  
- combined placement,  
even geometry



vertical or horizontal  
- combined placement,  
**uneven geometry**

## CORE ASSEMBLY INTO DUCTWORK – SILENCER CONNECTION AND ANCHORAGE



Connection of core silencers in ductworks is made via self-cutting screws or rivets. It is suitable to make the connection always in horizontal and also vertical part of the silencer. While positioning the silencers into the ductworks, it doesn't matter in which order nor position they will be placed. It is useful to fix the silencers in the ductworks, in that part where the air mass doesn't stream.

### ORDER KEY:

JTH - 200 / 300 / 1500

JTH - standard core silencer  
(galvanized steel plate, temperature resistance up to 200°C)

JTHH - core silencer; hygienic version  
(galvanized steel pl., temp. resistance up to 90°C)

JTHX - atypical core silencer  
(f.e. S/S plate, other temp. resistance, version)

„width“  
200 mm  
250 mm  
300 mm  
400 mm  
500 mm

„height“  
300 mm  
500 mm

„length“  
1000 mm  
1500 mm  
2000 mm

### SELECTION PROGRAM



To make easy proposal and selection of the right combination of silencers in accordance with noise source and complete noise situation in ductwork, we have developed a special program for this purpose - **AKUAIR**

Representative:



**STAVOKLIMA s.r.o.**

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