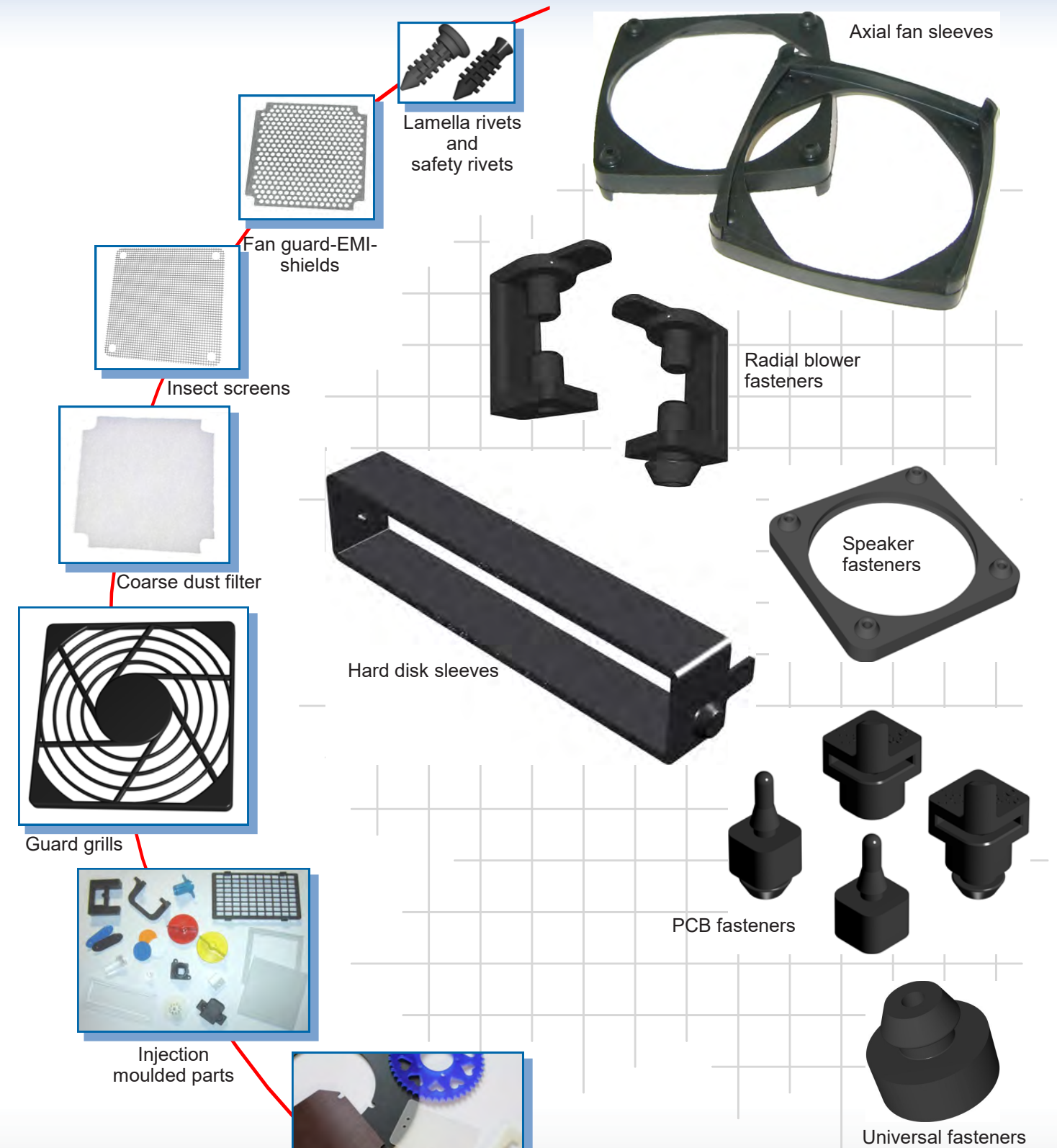


# ELASTIC FASTENERS and ACCESSORIES



Since 2003

Product Catalog





**THOPTEC GmbH** was founded in 2003 as a purely commercial enterprise. Over the years THOPTEC became a manufacturer, has specialized in the production of elastic fasteners and their accessories, customized injection moulded parts, laser cuttings and engravings. The resulting know-how means a major benefit and advantage for the customers.

Today the **THOPTEC Entwicklungs und Vertriebs GmbH** is not just a manufacturer, but also provides customers with support for special solutions where needed, beginning by product planning and designing up to a final serial production.




















We will find the best solutions for mounting electronic components in your equipment.

- The **technical support**,
- our **needs-based storage** ,
- our **sustainability** (REACH & RoHS conform)
- our **price stability**,
- our **flexibility**,

are highly appreciated by our customers!

Since September 2015 THOPTEC Entwicklungs & Vertriebs GmbH is

**certified to DIN EN ISO 9001:2015**

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With the patented elastic sleeves you can fasten axial fans quickly and safely without tools and screws on a mounting plate or housing wall. Made of elastic material the sleeves absorb vibrations, so that the noise level can be reduced up to 9 db (see next page).  
The sleeves are available in two different types and are applicable with all standardized axial fans from various manufacturers.



**Type LM with plug-in feet**  
(recommended for new developments)

Using type LM fan sleeves is the fastest way to mount and dismount axial fans.  
In addition, suitable accessories are available like fan guard-EMI-shields, coarse dust filters, insect screens and guard grills. All in combination with the fan sleeve type LM can be mounted without tools fast and safely.

**Type SLM with plug-in nipples**  
(recommended for subsequent installations)

Type SLM is perfect for the subsequent installations/retrofitings of present devices as the plug-in nipples are compatible to the **existing hole** cut-outs. They can be pulled through the present standard drilled holes in the housing wall.  
In addition, suitable accessories are available like fan guard-EMI-shields and insect screens.

concerning elastic fan sleeves

**Date:** 10.06.2003  
**Place:** Edel and Unedel Metall BG Sennfeld  
**Condition:** Sound cabin 31° C  
**Measuring equipment:** Brühl & Kjaer Type 2233  
**Level before measurement:** 0 dB (A)  
**Instrument setting:** L<sub>T</sub>  
**Frequency range (FSD):** 70 - (90)  
**Processing:** Planning office HK, Prof. Urban Str. 9a, 83043 Bad Aibling  
**Operator:** Mr. Holger Korb  
**Technical Support:** Mr. Kaiser

**Processing:**

**Set-up 1:** Into a standard PC housing of metal, (460 x 420 x 190 l/h/b) fan model PAPST TYPE 8412 NG 12V; DC170 mA was attached directly in the housing with 4 screws. Power supply transformer with 12 volt level.

**Measurement 1:** From a distance of 100 cm (X) and 150 cm (Y) with fixed measurement device

**Set-up 2:** Into a standard PC housing of metal, (460 x 420 x 190 l/h/b) fan model PAPST TYPE 8412 NG 12V; DC170 mA was attached with the elastic sleeve by THOPTEC GmbH into four 6 mm large mounting holes. Power supply transformer with 12 volt level.

**Measurement 2:** From a distance of 100 cm (X) and 150 cm (Y) with fixed measurement device.

Measurement results:	(X) 100 cm db (A)	(Y) 150 cm db (A)	Delta 100 cm db (A)	Delta 150 cm db (A)
Set-up/Measurement 1 attached directly with four screws	58,70	50,60		
Set-up/Measurement 2 attached with fan sleeve	49,65	47,00	- 9,05	- 3,60

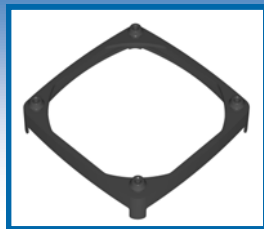

**Comment:** With the elastic fan sleeve from THOPTEC the noise level could be reduced up to 9,05 db (A). This equates a noise reduction of 15,42 percent and a perceived reduction of one-third to human ears.

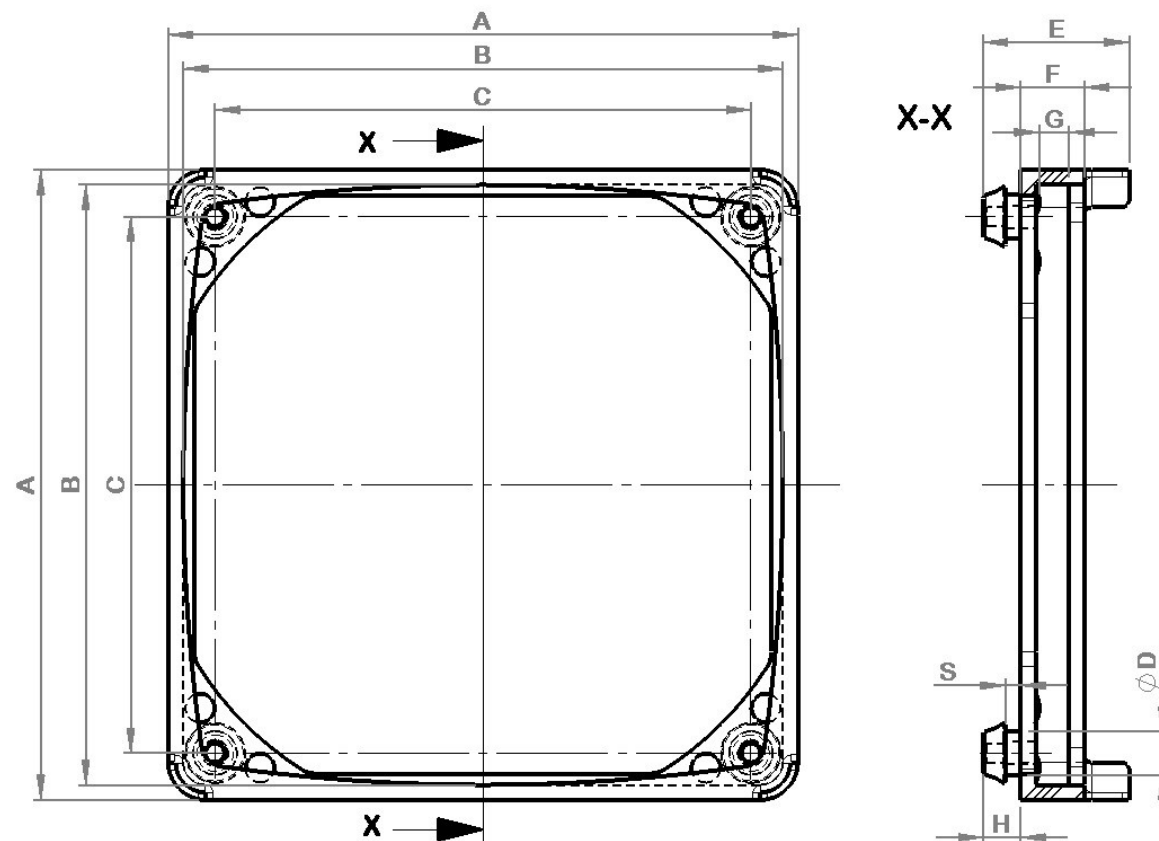
**Explanation:** The resonating cavity and the vibration behaviour of the material to which the fan is attached are the deciding factors in noise development. Different frequencies, high or low, determine the subjective noise perception.

With a fan that tends to generate noise in the high frequency range, the silencing effect is perceived more strongly than with a low-frequency noise.

Signed: Holger Korb Bad Aibling June 12, 2003



	<b>Material:</b> TPE (Thermoplastic elastomer) <b>Colour:</b> black <b>Hardness:</b> ca. 65° Shore A <b>Temperature resistance:</b> from -40 to +100° C <b>Fire resistance:</b> UL94-V-0 <b>Equals guideline:</b> REACH and RoHS	
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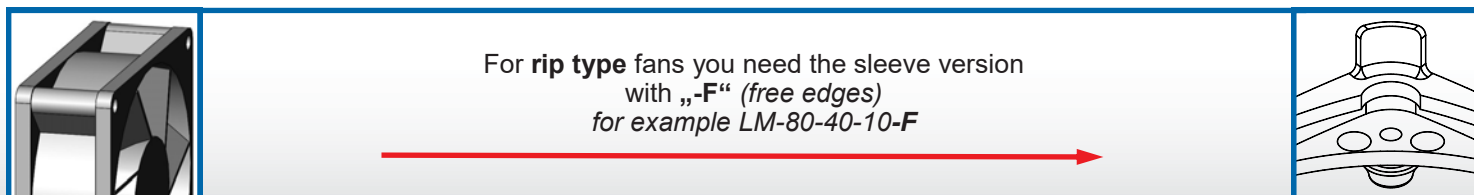


For the **article definition** you need:

- (I) the fan size (B),
- (II) the flange thickness (G)
- (III) and the panel thickness (S).

Small fans do not have an extra flange (see picture right).  
For these fans the flange means the height of the fan (G).

With \* marked fan types size G equals the fan height.



Article number:

**LM** — **40** — **20** — **10 or 20** — **(F)**

Article      Fan size B      fan flange thickness size G at 1/10 mm      panel thickness 10 = from 0,75 to 1,25 mm 20 = from 1,50 to 2,50 mm      free edges for rip type fans

Article no.	A	B	C	D	E	F	G	H	S	Panel thickness
LM-25-100-10	27	25	24	3,5	20,25	12,25	10,0 *	2,0	1,0	0,75 to 1,25
LM-25-100-20	27	25	24	3,5	21,25	12,25	10,0 *	2,0	2,0	1,50 to 2,50
LM-30-100-10	33	30	28	4,0	22,25	13,25	10,0 *	3,0	1,0	0,75 to 1,25
LM-30-100-20	33	30	28	4,0	23,25	13,25	10,0 *	4,0	2,0	1,50 to 2,50
LM-40-20-10-F	43	40	38	4,5	14,75	5,25	2,0	3,5	1,0	0,75 to 1,25
LM-40-20-20-F	43	40	38	4,5	15,75	5,25	2,0	4,5	2,0	1,50 to 2,50
LM-40-40-10-F	43	40	38	4,5	16,75	7,25	4,0	3,5	1,0	0,75 to 1,25
LM-40-40-20-F	43	40	38	4,5	17,75	7,25	4,0	4,5	2,0	1,50 to 2,50
LM-40-100-10	43	40	38	4,5	22,75	13,25	10,0 *	3,5	1,0	0,75 to 1,25
LM-40-100-20	43	40	38	4,5	23,75	13,25	10,0 *	4,5	2,0	1,50 to 2,50
LM-40-150-10	43	40	38	4,5	27,75	18,25	15,0 *	3,5	1,0	0,75 to 1,25
LM-40-150-20	43	40	38	4,5	28,75	18,25	15,0 *	4,5	2,0	1,50 to 2,50
LM-40-200-10	43	40	38	4,5	32,75	23,25	20,0 *	3,5	1,0	0,75 to 1,25
LM-40-200-20	43	40	38	4,5	33,75	23,25	20,0 *	4,5	2,0	1,50 to 2,50
LM-50-25-10-F (B42)	53	50	48	4,5	15,25	5,75	2,5	3,5	1,0	0,75 to 1,25
LM-50-25-20-F (B42)	53	50	48	4,5	16,5	5,75	2,5	4,5	2,0	1,50 to 2,50
LM-50-100-10 (B40)	53	50	48	4,5	22,75	13,25	10,0 *	3,5	1,0	0,75 to 1,25
LM-50-100-20 (B40)	53	50	48	4,5	23,75	13,25	10,0 *	4,5	2,0	1,50 to 2,50
LM-50-150-10 (B40)	53	50	48	4,5	27,75	18,25	15,0 *	3,5	1,0	0,75 to 1,25
LM-50-150-20 (B40)	53	50	48	4,5	28,75	18,25	15,0 *	4,5	2,0	1,50 to 2,50
LM-50-200-10 (B40)	53	50	48	4,5	32,75	23,35	20,0 *	3,5	1,0	0,75 to 1,25
LM-50-200-20 (B40)	53	50	48	4,5	33,75	23,25	20,0 *	4,5	2,0	1,50 to 2,50
LM-60-30-10 (-F)	64	60	58	5,0	17,50	7,50	3,0	4,0	1,0	0,75 to 1,25
LM-60-30-20 (-F)	64	60	58	5,0	18,50	7,50	3,0	5,0	2,0	1,50 to 2,50
LM-60-40-10 (-F)	64	60	58	5,0	18,50	8,50	4,0	4,0	1,0	0,75 to 1,25
LM-60-40-20 (-F)	64	60	58	5,0	19,50	8,50	4,0	5,0	2,0	1,50 to 2,50
LM-80-30-10 (-F)	84	80	77	5,8	17,50	7,50	3,0	4,0	1,0	0,75 to 1,25
LM-80-30-20 (-F)	84	80	77	5,8	18,50	7,50	3,0	5,0	2,0	1,50 to 2,50
LM-80-40-10 (-F)	84	80	77	5,8	18,50	8,50	4,0	4,0	1,0	0,75 to 1,25
LM-80-40-20 (-F)	84	80	77	5,8	19,50	8,50	4,0	5,0	2,0	1,50 to 2,50
LM-80-50-10 (-F)	84	80	77	5,8	20,50	9,50	5,0	4,0	1,0	0,75 to 1,25
LM-80-50-20 (-F)	84	80	77	5,8	21,50	9,50	5,0	5,0	2,0	1,50 to 2,50
LM-92-40-10(-F)	97	92	89	6,0	19,50	9,50	4,0	4,0	1,0	0,75 to 1,25
LM-92-40-20 (-F)	97	92	89	6,0	20,50	9,50	4,0	5,0	2,0	1,50 to 2,50
LM-92-50-10 (-F)	97	92	89	6,0	21,50	10,50	5,0	4,0	1,0	0,75 to 1,25
LM-92-50-20 (-F)	97	92	89	6,0	22,50	10,50	5,0	5,0	2,0	1,50 to 2,50
LM-92-60-10 (-F)	97	92	89	6,0	23,50	11,50	6,0	4,0	1,0	0,75 to 1,25
LM-92-60-20 (-F)	97	92	89	6,0	24,50	11,50	6,0	5,0	2,0	1,50 to 2,50
LM-119-40-10 (-F)	125	119	116	8,0	22,00	9,50	4,0	4,5	1,0	0,75 to 1,25
LM-119-40-20 (-F)	125	119	116	8,0	23,00	9,50	4,0	5,5	2,0	1,50 to 2,50
LM-119-50-10 (-F)	125	119	116	8,0	24,00	10,50	5,0	4,5	1,0	0,75 to 1,25
LM-119-50-20 (-F)	125	119	116	8,0	25,00	10,50	5,0	5,5	2,0	1,50 to 2,50
LM-119-60-10 (-F)	125	119	116	8,0	26,00	11,50	6,0	4,5	1,0	0,75 to 1,25
LM-119-60-20 (-F)	125	119	116	8,0	27,00	11,50	6,0	5,5	2,0	1,50 to 2,50

All dimensions in mm!

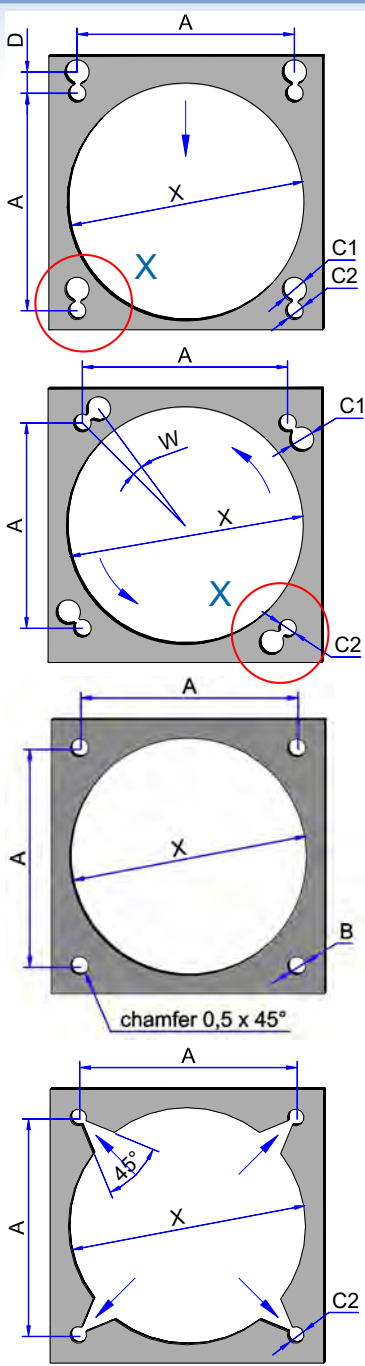
Other sleeves/dimensions on request!

CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

Legend:

<b>Size A:</b>	max. outside dimension	<b>Size D:</b>	diameter of the plug-in foot	<b>Size G:</b>	flange thickness or fan height
<b>Size B:</b>	fan size	<b>Size E:</b>	overall height of the fan sleeve	<b>Size H:</b>	height of the plug-in foot over the fan sleeve
<b>Size C:</b>	Distance between the feet	<b>Size F:</b>	height of the fan sleeve without plug-in foot	<b>Size S:</b>	clearance of the plug-in foot

The fan sleeves for type LM can be fixed in four different ways, depending on the hole cut-outs and space circumstances. Only one of these hole patterns needs to be made in the mounting plate or housing wall.



Plug-and-push/ pull mounting style/ hole cut-out no.1 (recommended )

First of all pull the sleeve over the flange of the fan. Then plug in the four feet into the larger holes C1 of the mounting panel and push them into the smaller holes C2.

There must be enough space for installation to be able to push the fan including the fan sleeve in one direction. The backside doesn't have to be accessible.

Plug-and-turn mounting style/ hole cut-out no.2 (recommended )

First of all pull the sleeve over the flange of the fan. Then plug in the four feet into the larger holes C1 of the mounting panel and turn them into the smaller holes C2.

There must be enough space for installation to be able to turn the fan including the fan sleeve. The backside doesn't have to be accessible.

Plug-in mounting style/ hole cut-out no.3 (conditionally recommended )

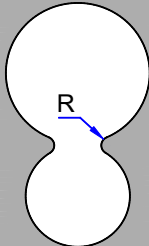
First of all pull the sleeve over the flange of the fan. Then plug-in the four feet through the drilled holes B of the mounting panel and pull them out on the backside. Therefore the drilled holes need to be chamfered from the installation side.

This hole cut-out is preferred if space circumstances are very tight. The **backside must be accessible** for being able to pull out the feet.

Plug-and-pull mounting style/ hole cut-out no.4 (conditionally recommended )

First of all plug in the four feet through the 45° outbreaks in the mounting panel and then pull them lateral into the holes C2. Now put the fan into the sleeve and pull the corners over the flange of the fan.

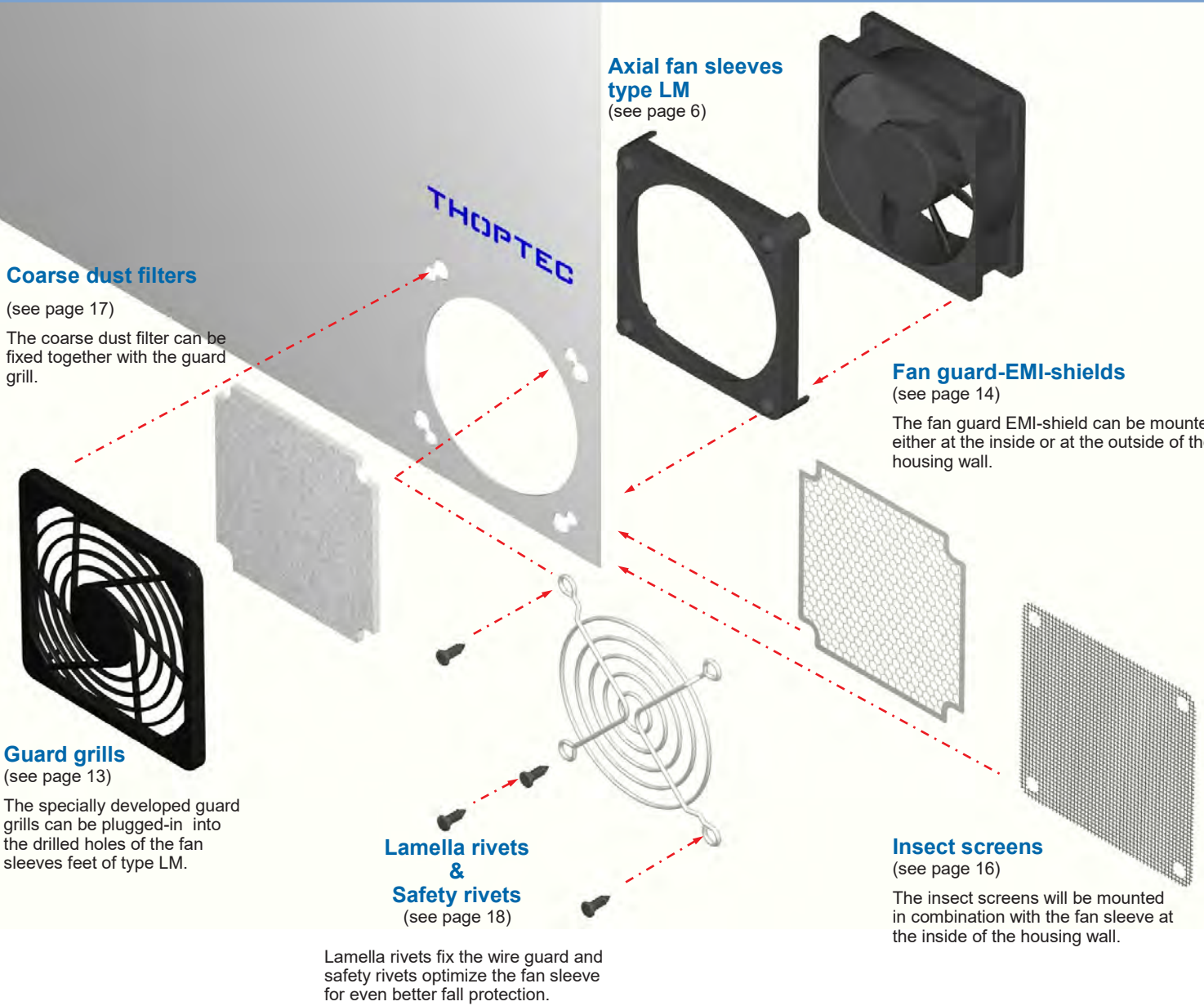
This hole cut-out is preferred if there is enough space around the fan to be able to pull the sleeve over the flange. The backside doesn't have to be accessible.

hole pattern dimensions	A	B	C1	C2	D	R	W	Detail X
For LM-25...	20,0	3,8	3,5	4,5	3,50	0,2-0,5	14,5°	 <p>By adjusting the size D/ W and the size of radius R the resisting force for mounting and dismantling the fan including the fan sleeve can be altered.</p>
For LM-30...	24,0	4,5	5,5	4,0	5,00	0,5-1,0	16,5°	
For LM-40...	32,0	5,0	6,5	4,5	5,75	0,5-1,0	14,5°	
For LM-50...	40,0 / 42,0	5,0	6,5	4,5	5,75	0,5-1,0	11,0°	
For LM-60...	50,0	5,5	7,5	5,0	6,50	0,5-1,0	10,5°	
For LM-80...	71,5	6,5	8,0	6,0	7,00	0,5-1,0	8,0°	
For LM-92...	82,5	6,5	8,5	6,0	7,25	0,5-1,0	7,0°	
For LM-119...	105,0	8,5	11,0	8,0	9,50	1,0-2,0	7,0°	
Form/ dimensions of Ø X are depending on the manufacturers of the fan								

All dimensions in mm!

Downloads for CAD datas of hole cut-outs at: [www.thoptec.com](http://www.thoptec.com)

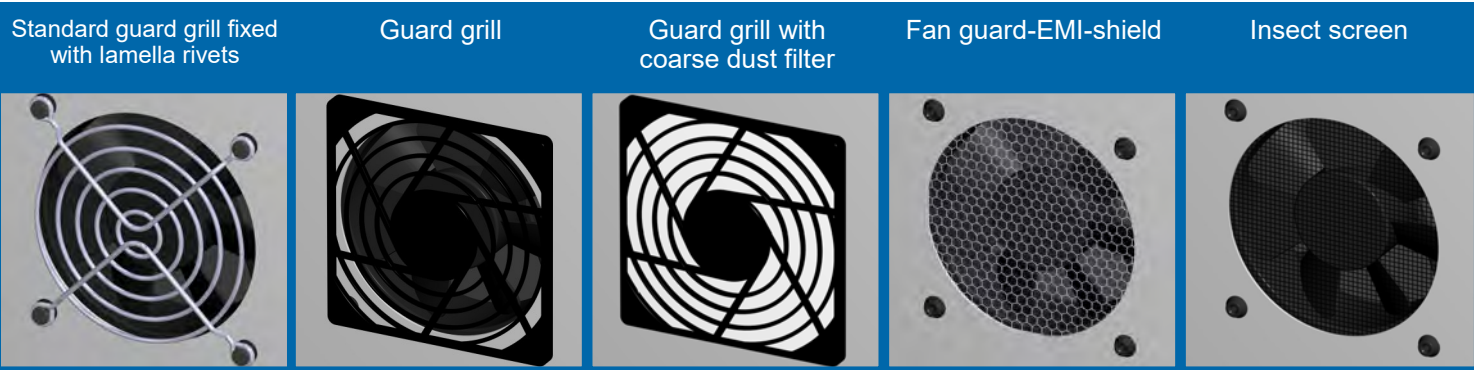
In combination to the fan sleeves type LM, various accessories are available, which also can be installed in a very quick and easy way, without screws and extra tools.



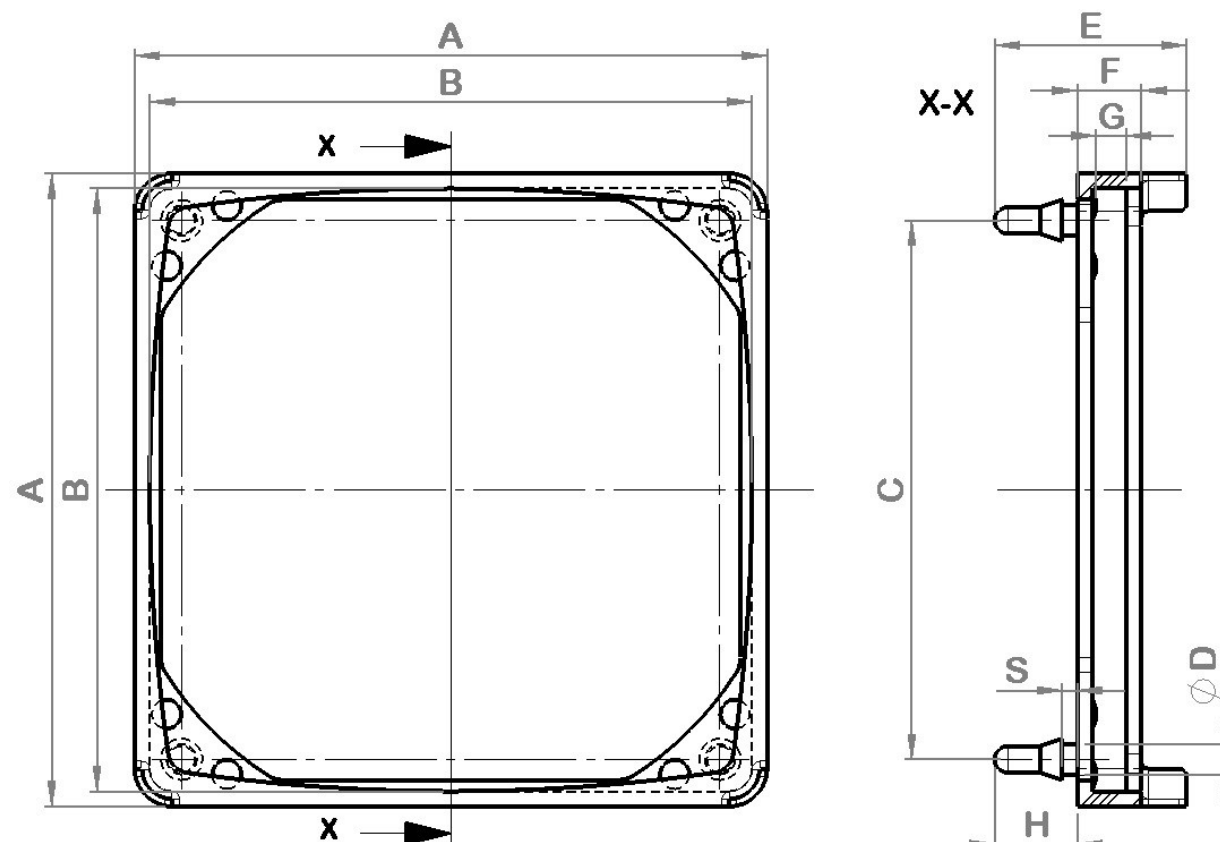
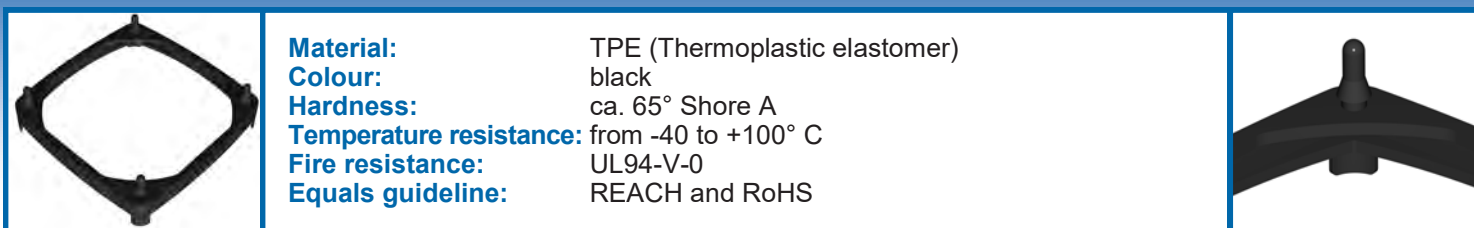
**Mounting information**

Into the drilled holes of the protruding feet at the outside of the housing wall you can mount our specially developed accessories like guard grills, coarse dust filters, fan guard-EMI-shields and insect screens.

Also you can use standard guard grills, which can be fixed with either screws or our specially developed lamella rivets. Important to know: The protruding feet ensure sufficient space for air circulation to avoid overheating and possible damage of the device.







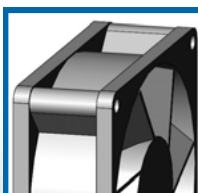
**Attention:** This fan sleeve is intended as a temporary solution if a housing change is not possible immediately. For series use with our accessories, we recommend the LM type with one of the hole patterns recommended on page 8.

For the **article definition** you need:

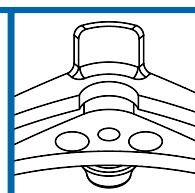
- (I) the fan size (B),
- (II) the flange thickness (G)
- (III) and the panel thickness (S).

Small fans do not have an extra flange (see picture right). For these fans the flange means the height of the fan (G).

With \* marked fan-types size G equals the fan height.



For **rip type** fans you need the sleeve-types with „-F“ (free edges) for example SLM-80-40-10-F



Article number:

SLM	40	20	10 or 20	(F)
Article	fan size B	fan flange thickness size G at 1/10 mm	panel thickness 10 = from 0,75 to 1,75 mm 20 = from 2,00 to 3,50 mm	free edges for rip type fans

Article no.	A	B	C	D	E	F	G	H	S	panel thickness
SLM-25-100-10	27	25	24	2,6	24,00	12,25	10,0 *	6,0	0,75	0,75 to 1,75
SLM-25-100-20	27	25	24	2,6	25,00	12,25	10,0 *	6,0	1,75	2,00 to 3,50
SLM-30-100-10	33	30	28	2,6	27,00	13,25	10,0 *	7,0	0,75	0,75 to 1,75
SLM-30-100-20	33	30	28	2,6	28,00	13,25	10,0 *	7,0	1,75	2,00 to 3,50
SLM-40-20-10-F	43	40	38	4,0	20,00	5,25	2,0	8,0	0,75	0,75 to 1,75
SLM-40-20-20-F	43	40	38	4,0	21,00	5,25	2,0	8,0	1,75	2,00 to 3,50
SLM-40-40-10-F	43	40	38	4,0	22,00	7,25	4,0	8,0	0,75	0,75 to 1,75
SLM-40-40-20-F	43	40	38	4,0	23,00	7,25	4,0	8,0	1,75	2,00 to 3,50
SLM-40-100-10	43	40	38	4,0	28,00	13,25	10,0 *	8,0	0,75	0,75 to 1,75
SLM-40-100-20	43	40	38	4,0	29,00	13,25	10,0 *	8,0	1,75	2,00 to 3,50
SLM-40-150-10	43	40	38	4,0	33,00	18,25	15,0 *	8,0	0,75	0,75 to 1,75
SLM-40-150-20	43	40	38	4,0	34,00	18,25	15,0 *	8,0	1,75	2,00 to 3,50
SLM-40-200-10	43	40	38	4,0	38,00	23,25	20,0 *	8,0	0,75	0,75 to 1,75
SLM-40-200-20	43	40	38	4,0	39,00	23,25	20,0 *	8,0	1,75	2,00 to 3,50
SLM-50-25-10-F (B42)	53	50	48	4,0	20,50	5,75	2,5	8,0	0,75	0,75 to 1,75
SLM-50-25-20-F (B42)	53	50	48	4,0	21,50	5,75	2,5	8,0	1,75	2,00 to 3,50
SLM-50-100-10 (B40)	53	50	48	4,0	28,00	13,25	10,0 *	8,0	0,75	0,75 to 1,75
SLM-50-100-20 (B40)	53	50	48	4,0	29,00	13,25	10,0 *	8,0	1,75	2,00 to 3,50
SLM-50-150-10 (B40)	53	50	48	4,0	33,00	18,25	15,0 *	8,0	0,75	0,75 to 1,75
SLM-50-150-20 (B40)	53	50	48	4,0	34,00	18,25	15,0 *	8,0	1,75	2,00 to 3,50
SLM-50-200-10 (B40)	53	50	48	4,0	38,00	23,25	20,0 *	8,0	0,75	0,75 to 1,75
SLM-50-200-20 (B40)	53	50	48	4,0	39,00	23,25	20,0 *	8,0	1,75	2,00 to 3,50
SLM-60-30-10 (-F)	64	60	58	4,0	23,25	7,50	3,0	9,0	0,75	0,75 to 1,75
SLM-60-30-20 (-F)	64	60	58	4,0	24,25	7,50	3,0	9,0	1,75	2,00 to 3,50
SLM-60-40-10 (-F)	64	60	58	4,0	24,25	8,50	4,0	9,0	0,75	0,75 to 1,75
SLM-60-40-20 (-F)	64	60	58	4,0	25,25	8,50	4,0	9,0	1,75	2,00 to 3,50
SLM-80-30-10 (-F)	84	80	77	4,0	23,25	7,50	3,0	9,0	0,75	0,75 to 1,75
SLM-80-30-20 (-F)	84	80	77	4,0	24,25	7,50	3,0	9,0	1,75	2,00 to 3,50
SLM-80-40-10 (-F)	84	80	77	4,0	24,25	8,50	4,0	9,0	0,75	0,75 to 1,75
SLM-80-40-20 (-F)	84	80	77	4,0	25,25	8,50	4,0	9,0	1,75	2,00 to 3,50
SLM-80-50-10 (-F)	84	80	77	4,0	25,25	9,50	5,0	9,0	0,75	0,75 to 1,75
SLM-80-50-20 (-F)	84	80	77	4,0	26,25	9,50	5,0	9,0	1,75	2,00 to 3,50
SLM-92-40-10 (-F)	97	92	89	4,0	26,25	9,50	4,0	9,0	0,75	0,75 to 1,75
SLM-92-40-20 (-F)	97	92	89	4,0	27,25	9,50	4,0	9,0	1,75	2,00 to 3,50
SLM-92-50-10 (-F)	97	92	89	4,0	27,25	10,50	5,0	9,0	0,75	0,75 to 1,75
SLM-92-50-20 (-F)	97	92	89	4,0	28,25	10,50	5,0	9,0	1,75	2,00 to 3,50
SLM-92-60-10 (-F)	97	92	89	4,0	28,25	11,50	6,0	9,0	0,75	0,75 to 1,75
SLM-92-60-20 (-F)	97	92	89	4,0	29,25	11,50	6,0	9,0	1,75	2,00 to 3,50
SLM-119-40-10 (-F)	125	119	116	4,0	28,25	9,50	4,0	10,0	0,75	0,75 to 1,75
SLM-119-40-20 (-F)	125	119	116	4,0	29,25	9,50	4,0	10,0	1,75	2,00 to 3,50
SLM-119-50-10 (-F)	125	119	116	4,0	29,25	10,50	5,0	10,0	0,75	0,75 to 1,75
SLM-119-50-20 (-F)	125	119	116	4,0	30,25	10,50	5,0	10,0	1,75	2,00 to 3,50
SLM-119-60-10 (-F)	125	119	116	4,0	30,25	11,50	6,0	10,0	0,75	0,75 to 1,75
SLM-119-60-20 (-F)	125	119	116	4,0	31,25	11,50	6,0	10,0	1,75	2,00 to 3,50

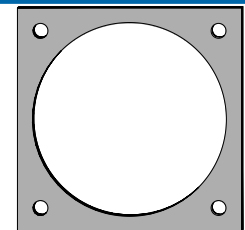
All dimensions in mm!

Other sleeves/ dimensions on request!

CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

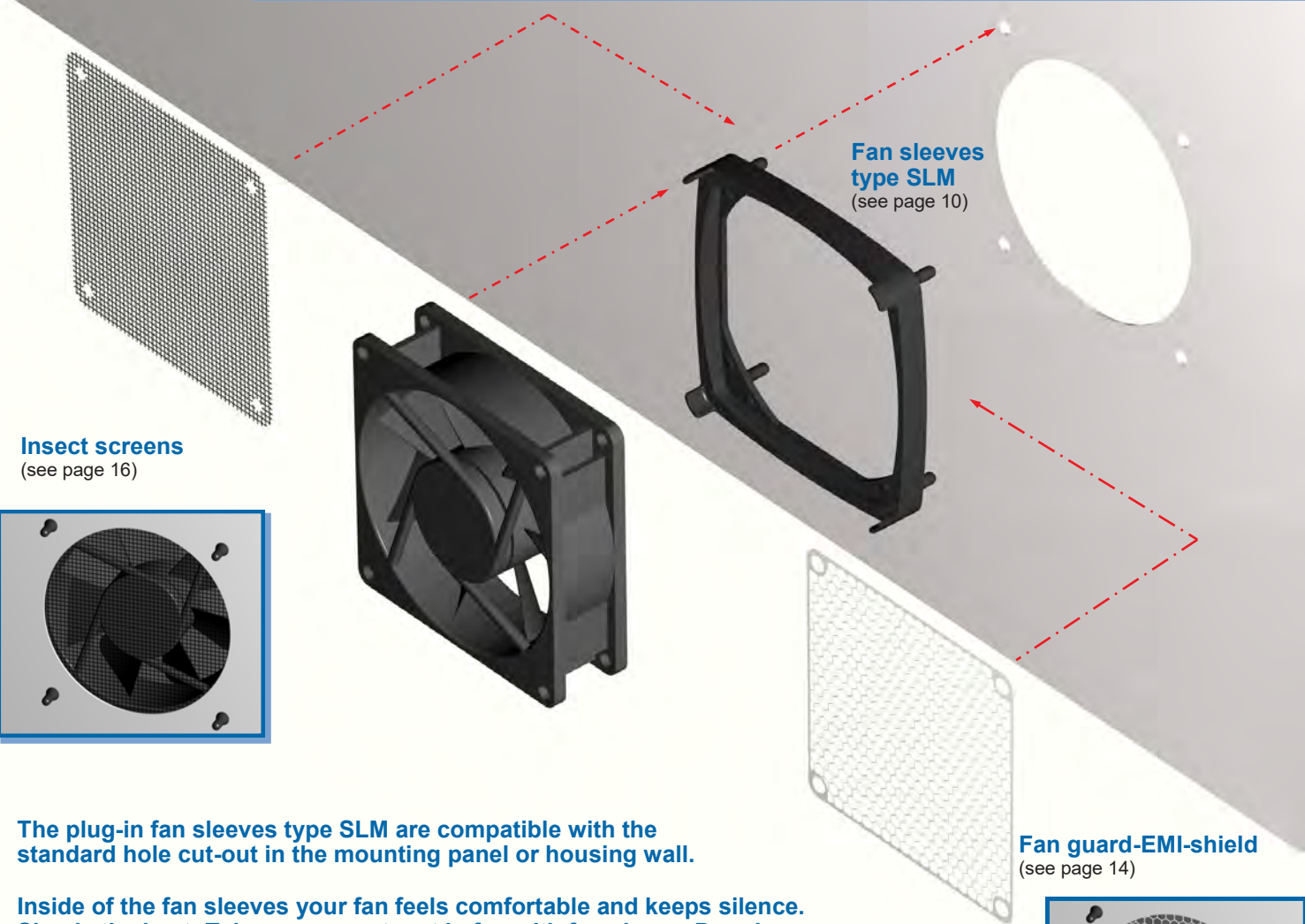
Legend:

Size A:	max. outside dimension	Size D:	diameter of the nipples	Size G:	flange thickness or fan height
Size B:	fan size	Size E:	overall height of the fan sleeve	Size H:	height of the nipples
Size C:	distance between the nipples	Size F:	height of the fan sleeve without nipples	Size S:	clearance of the nipples



Standard hole pattern / measurements for mounting panels and housing walls

The plug-in fan sleeves of the SLM type are ideal for retrofitting of existing devices, since the plug-in nipples can be pulled through the existing standard holes in the housing wall and no changes to the hole cut-out are required. Optionally, a fan guard-EMI-shield or an insect screen can be mounted together with the plug-in fan sleeve.



Insect screens  
(see page 16)

Fan sleeves  
type SLM  
(see page 10)

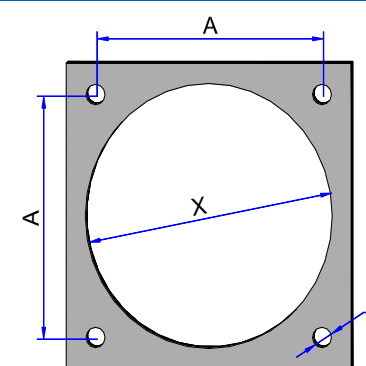
Fan guard-EMI-shield  
(see page 14)

The plug-in fan sleeves type SLM are compatible with the standard hole cut-out in the mounting panel or housing wall.

Inside of the fan sleeves your fan feels comfortable and keeps silence. Simply the best: Take screws out, put in fan with fan sleeve. Done!

**Mounting information**  
First of all pull the sleeve over the flange of the fan. Then plug in the four nipples through the drilled holes of the mounting panel and pull them through from the backside without tools(!).

dimensions of the hole pattern

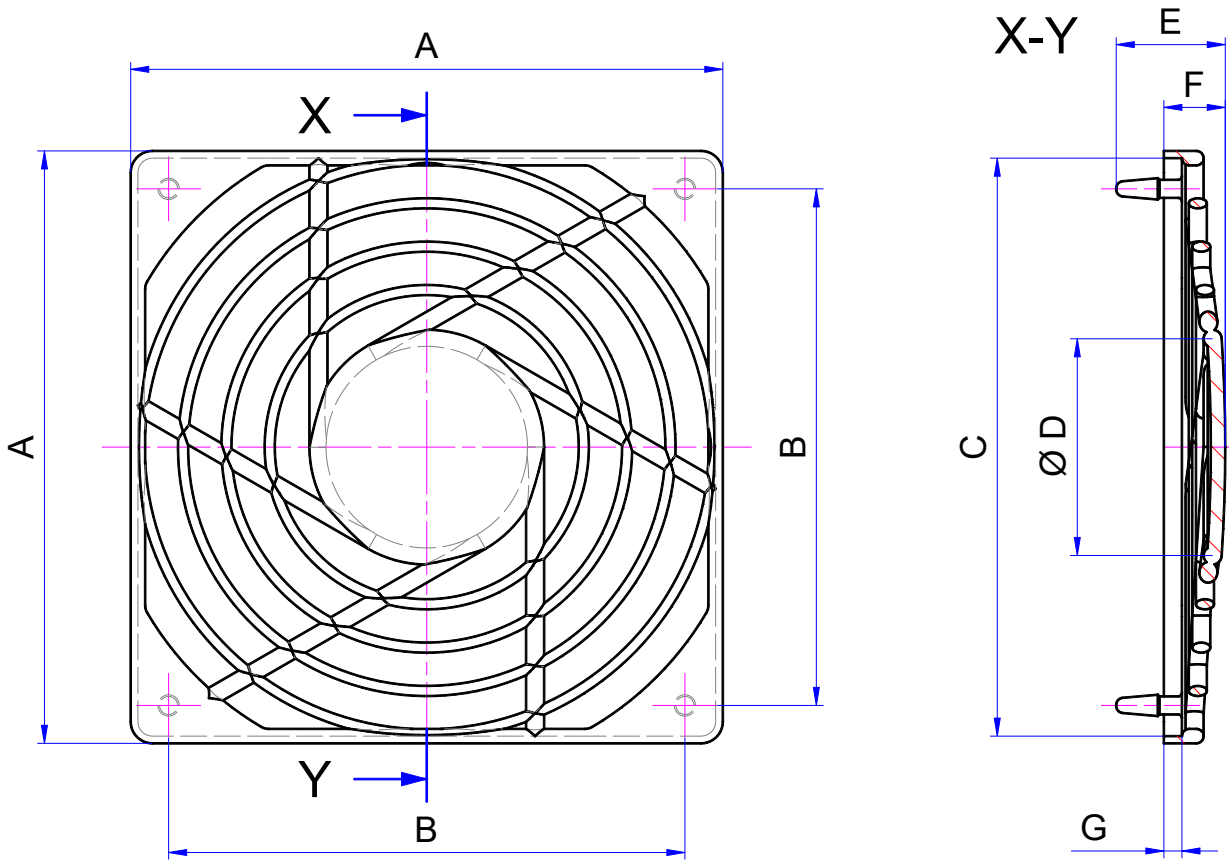


	A	B	X
for SLM-25...	20,0	2,8	Form/ dimensions of Ø X are depending on the manufacturer of the fan
for SLM-30...	24,0	2,8	
for SLM-40...	32,0	4,3	
for SLM-50...	40,0 / 42,0	4,3	
for SLM-60...	50,0	4,3	
for SLM-80...	71,5	4,3	
for SLM-92...	82,5	4,3	
for SLM-119...	105,0	4,3	

All dimensions in mm!



**Material:** Plastic (PA6 / PA66)  
**Colour:** black (other colours on request)  
**Fire resistance:** UL94-V-0(marked with \*) / UL94-V-2  
**Equals guideline:** REACH and RoHS  
The guard grills can be plugged into the feet of the fan sleeves type LM.



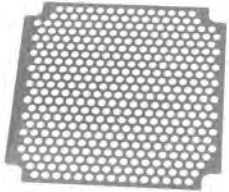
Article number: **SG** **40** **01** **Bxx** dimension B for fan size 50

Article fan size type code 01 = dimension A as small as possible.  
type code 02 = dimension A bigger, makes sure that hole-cut out 2 (see page 8, plug and turn mounting) is completely covered by the guard grill.

Article no.	A	B	C	D	E	F	G
SG-25-01 *	27,0	20,0	25,0	10,0	12,1	7,0	2,0
SG-25-02 *	31,0	20,0	25,0	10,0	12,1	7,0	2,0
SG-30-01 *	32,0	24,0	30,0	14,0	12,1	7,0	2,0
SG-30-02 *	36,0	24,0	30,0	14,0	12,1	7,0	2,0
SG-40-01 *	42,0	32,0	40,0	18,0	12,6	7,5	2,5
SG-40-02 *	46,0	32,0	40,0	18,0	12,6	7,5	2,5
SG-50-01-B40 *	52,0	40,0	50,0	24,0	13,1	8,0	2,5
SG-50-01-B42 *	52,0	42,0	50,0	24,0	13,1	8,0	2,5
SG-50-02-B40 *	56,0	40,0	50,0	24,0	13,1	8,0	2,5
SG-50-02-B42 *	56,0	42,0	50,0	24,0	13,1	8,0	2,5
SG-60-01	62,0	50,0	60,0	27,0	15,1	8,5	2,5
SG-60-02	66,0	50,0	60,0	27,0	15,1	8,5	2,5
SG-80-01	82,0	71,5	80,0	30,0	15,1	8,5	2,5
SG-80-02	89,0	71,5	80,0	30,0	15,1	8,5	2,5
SG-92-01	94,0	82,5	92,0	30,0	15,1	8,5	2,5
SG-92-02	101,0	82,5	92,0	30,0	15,1	8,5	2,5
SG-119-01	121,0	105,0	119,0	42,0	16,6	9,0	3,0
SG-119-02	128,0	105,0	119,0	42,0	16,6	9,0	3,0

All dimensions in mm! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.





**Material:** stainless steel (spring V2A) material no. 1.4310/AISI 301

**Material thickness:** 0,2 mm

**Equals guideline:** REACH and RoHS

(EMI = electromagnetic interference)

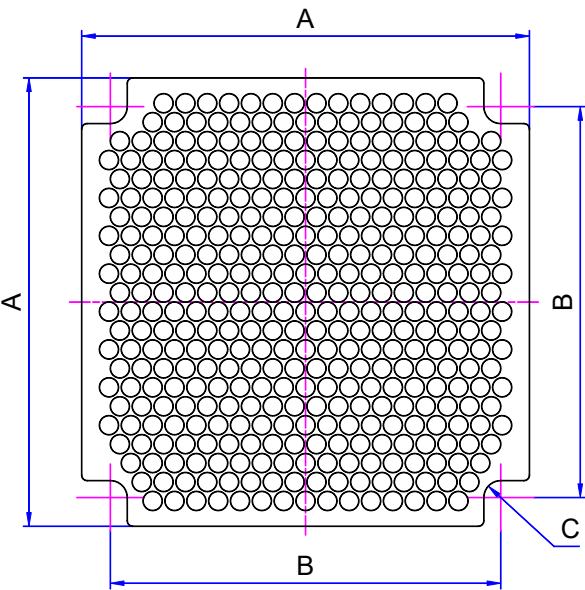
The use of EMI-shields prevents technical devices from interfering with each other through unwanted electrical or electromagnetic effects.

In a test setup, an improvement in EMI tightness with installed EMI shields was measured over the entire frequency range, even up to approx. 50% in the peaks.

They also serve as protection against contact and prevent the coarse dust filter from being sucked in (see page 17).

EMI shields can be mounted on the inside or outside of the housing wall. Mounting on the inside has the advantage that the sleeve presses the fan guard-EMI-shields directly onto the usually bare or, in the case of plastic housings, metal-coated inside of the housing. The sheet metal seals the fan opening from an EMI perspective. The thin stainless steel grille ensures EMI attenuation while ensuring maximum air flow!

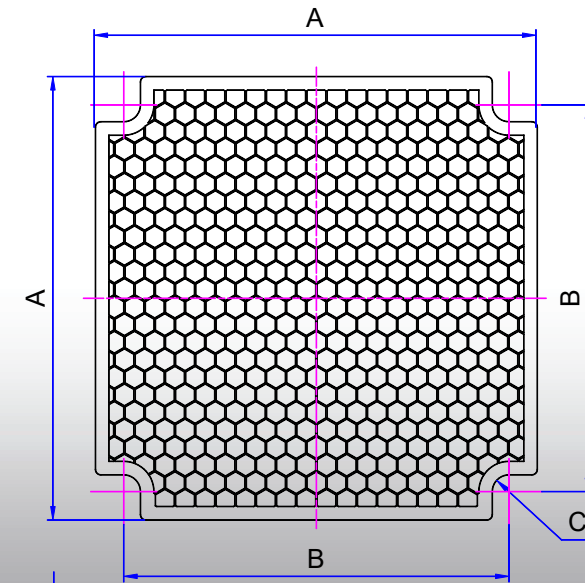
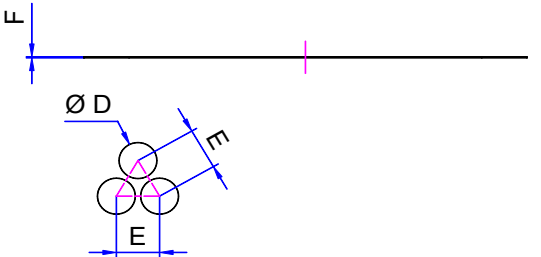
Unlike plastic grilles, protective wire grilles or holes in the housing, with EMI shields, any change in air noise when the fan is running is hardly audible!



**Type RE**  
round hole perforation in offset pattern

Free air flow rate approximately at **75 %**

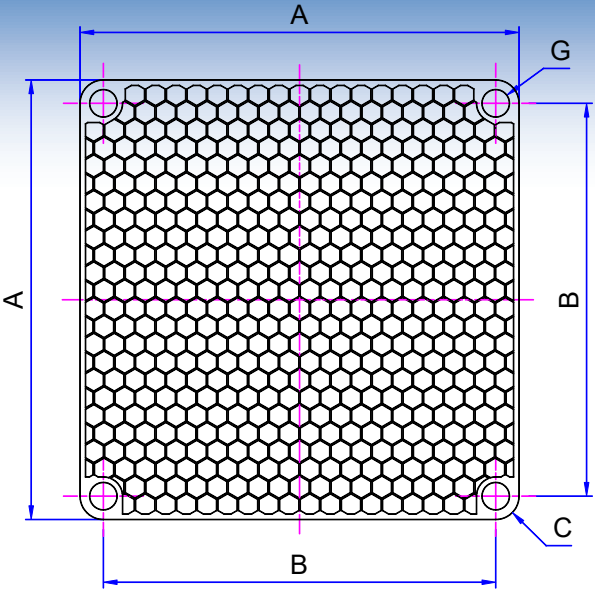
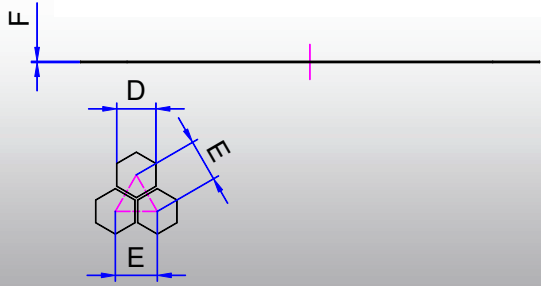
Installation possible in combination with fan sleeve type LM!



**Type SE**  
hexagon perforation in offset pattern

Free air flow rate approximately at **85 %**

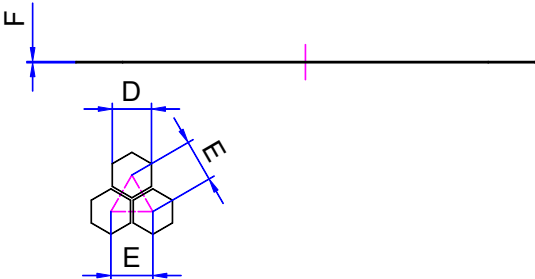
Installation possible in combination with fan sleeve type LM!



**Type SH**  
hexagon perforation in offset pattern

Free air flow rate approximately at **85 %**

Installation possible in combination with fan sleeve type SLM, but also by using the four holes and attach it with standard screws or rivets. Dimension of A is a little smaller/ max. as big as the fan.



Special sizes, individual texts or logos are possible !

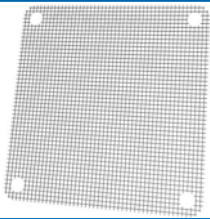
Article number:	LEB	40	RE / SE / SH	25	Bxx
	Article	fan size	type	hole diameter in 1/10 mm	dimension B for fan size 50

Article no.	A	B	C	D	E	F	G
LEB-25-RE-15	27,0	20,0	R 1,75	1,5	2,00	0,2	-
LEB-25-SE-15	27,0	20,0	R 1,75	1,5	1,75	0,2	-
LEB-25-SH-15	25,0	20,0	R 3,00	1,5	1,75	0,2	Ø 2,8
LEB-30-RE-20	32,0	24,0	R 2,10	2,0	2,50	0,2	-
LEB-30-SE-20	32,0	24,0	R 2,10	2,0	2,25	0,2	-
LEB-30-SH-20	30,0	24,0	R 3,00	2,0	2,25	0,2	Ø 3,5
LEB-40-RE-25	42,0	32,0	R 2,40	2,5	3,00	0,2	-
LEB-40-SE-25	42,0	32,0	R 2,40	2,5	2,75	0,2	-
LEB-40-SH-25	40,0	32,0	R 4,00	2,5	2,75	0,2	Ø 4,8
LEB-50-RE-30-B40	52,0	40,0	R 2,40	3,0	3,50	0,2	-
LEB-50-SE-30-B40	52,0	40,0	R 2,40	3,0	3,25	0,2	-
LEB-50-SH-30-B40	50,0	40,0	R 5,00	3,0	3,25	0,2	Ø 4,8
LEB-50-RE-30-B42	52,0	42,0	R 2,40	3,0	3,50	0,2	-
LEB-50-SE-30-B42	52,0	42,0	R 2,40	3,0	3,25	0,2	-
LEB-50-SH-30-B42	50,0	42,0	R 5,00	3,0	3,25	0,2	Ø 4,8
LEB-60-RE-35	62,0	50,0	R 2,70	3,5	4,00	0,2	-
LEB-60-SE-35	62,0	50,0	R 2,70	3,5	3,75	0,2	-
LEB-60-SH-35	60,0	50,0	R 5,00	3,5	3,75	0,2	Ø 5,0
LEB-80-RE-35	82,0	71,5	R 3,20	3,5	4,00	0,2	-
LEB-80-SE-35	82,0	71,5	R 3,20	3,5	3,75	0,2	-
LEB-80-SH-35	80,0	71,5	R 4,25	3,5	3,75	0,2	Ø 5,0
LEB-92-RE-40	94,0	82,5	R 3,20	4,0	4,50	0,2	-
LEB-92-SE-40	94,0	82,5	R 3,20	4,0	4,25	0,2	-
LEB-92-SH-40	92,0	82,5	R 4,75	4,0	4,25	0,2	Ø 5,0
LEB-119-RE-50	121,0	105,0	R 4,20	5,0	5,50	0,2	-
LEB-119-SE-50	121,0	105,0	R 4,20	5,0	5,30	0,2	-
LEB-119-SH-50	119,0	105,0	R 7,00	5,0	5,30	0,2	Ø 5,5

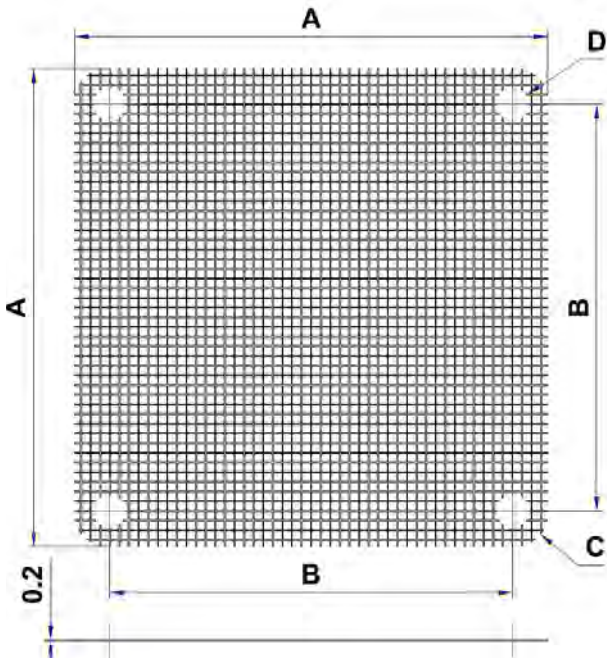
All dimesions in mm! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

Legend:							
Size A:	max. outside dimension	Size C:	inside- / outside radius	Size E:	distance between holes on EMI-shield	Size G:	diameter EMI-shield drilled hole
Size B:	distance between plug-in feet / nipples	Size D:	diameter holes on EMI-shield	Size F:	height/ thickness of material		





**Material:** plastic tissue (PVC free), anthracite  
**Material thickness:** approximately 0,2 mm  
**Equals guideline:** REACH and RoHS  
The installation of insect screens is possible in combination with fan sleeve type LM or SLM, but can be fixed together with the fan by standard screws or rivets.



Article number: **ISG** **40** **SF / SN** **Bxx**  
Article fan size Type codes: **SF** for fan sleeves type LM  
**SN** for plug-in fan sleeves type SLM dimension B for fan size 50

Article no.	A	B	C	D
ISG-25-SF	27,0	20,0	R 3,5	3,5
ISG-25-SN	27,0	20,0	R 3,5	2,6
ISG-30-SF	33,0	24,0	R 3,5	4,0
ISG-30-SN	33,0	24,0	R 3,5	2,6
ISG-40-SF	43,0	32,0	R 4,0	4,5
ISG-40-SN	43,0	32,0	R 4,0	4,0
ISG-50-SF-B40 / B42	53,0	40,0 / 42,0	R 4,5	4,5
ISG-50-SN-B40 / B42	53,0	40,0 / 42,0	R 4,5	4,0
ISG-60-SF	64,0	50,0	R 7,0	5,0
ISG-60-SN	64,0	50,0	R 7,0	4,0
ISG-80-SF	84,0	71,5	R 6,0	6,0
ISG-80-SN	84,0	71,5	R 6,0	4,0
ISG-92-SF	97,0	82,5	R 6,5	6,0
ISG-92-SN	97,0	82,5	R 6,5	4,0
ISG-119-SF	125,0	105,0	R 7,5	8,0
ISG-119-SN	125,0	105,0	R 7,5	4,0

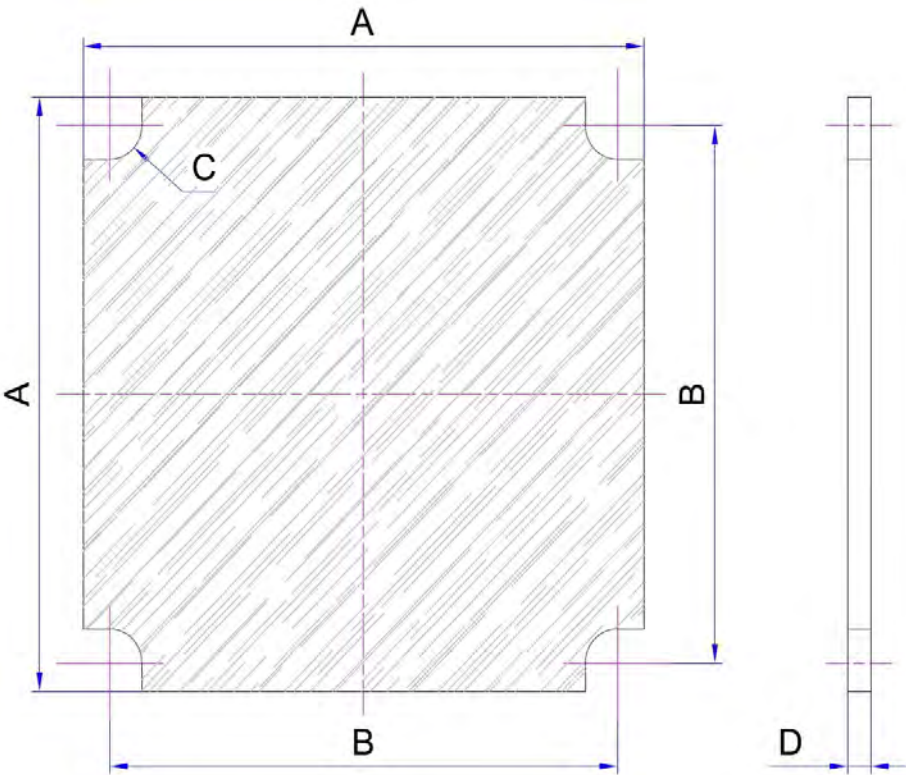
All dimensions in mm! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

Legend:

Size A:	max. outside dimension	Size B:	distance between plug-in feet/ nipples	Size C:	outside radius	Size D:	diameter drilled hole
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**Material:** Coarse dust filter FL100  
**Filter class:** G2 DIN EN 779  
**Material thickness:** approximately 5 mm  
**Fire resistance:** self-extinguishing DIN 53438 F1  
**Equals guideline:** REACH and RoHS  
The installation of the coarse dust filters is possible in combination with our guard grills.



Article number: **GSF** **40** **01** **Bxx**  
Article fan size type code dimension B for fan size 50

Article no.	A	B	C	D
GSF-25-01	25,0	20,0	R 2,5	5,0
GSF-30-01	30,0	24,0	R 3,0	5,0
GSF-40-01	40,0	32,0	R 3,0	5,0
GSF-50-01-B40	50,0	40,0	R 3,0	5,0
GSF-50-01-B42	50,0	42,0	R 3,0	5,0
GSF-60-01	60,0	50,0	R 3,5	5,0
GSF-80-01	80,0	71,5	R 4,0	5,0
GSF-92-01	92,0	82,5	R 4,5	5,0
GSF-119-01	119,0	105,0	R 5,5	5,0



All dimensions in mm! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

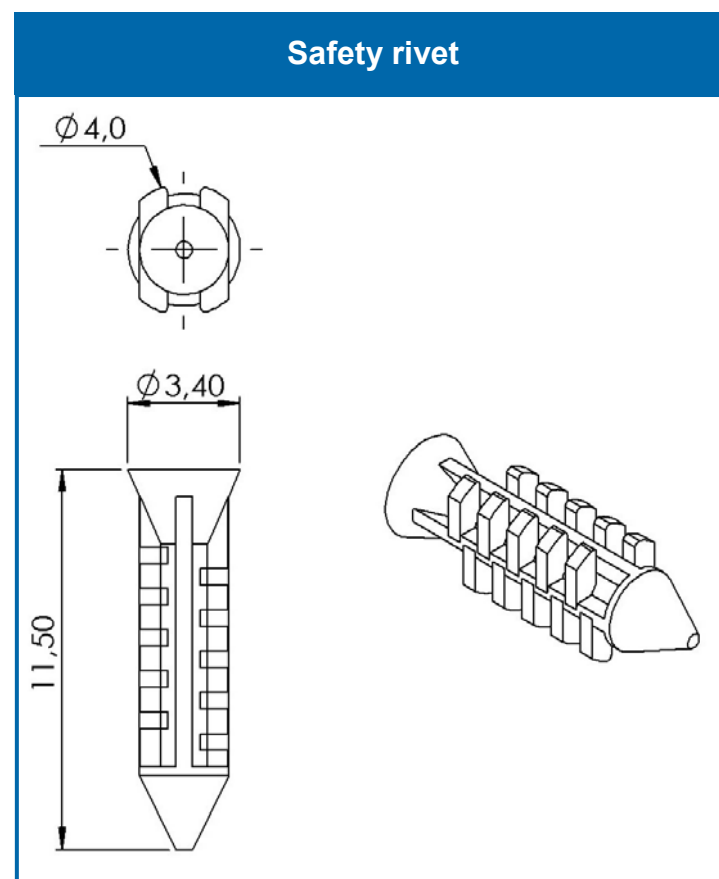
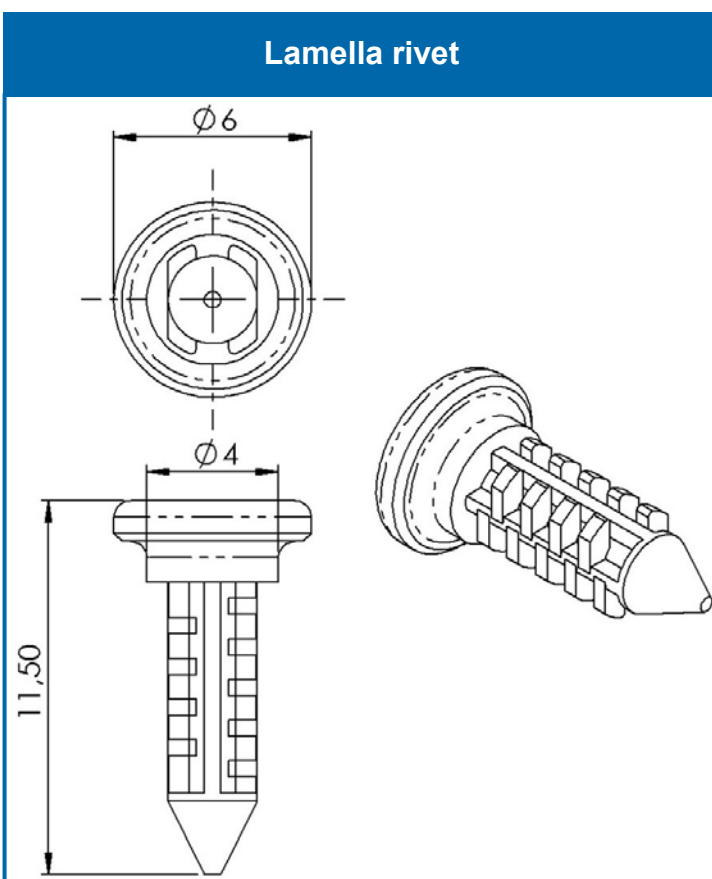
Legend:

Size A:	max. outside dimension	Size B:	distance between plug-in feet/ nipples	Size C:	inside radius	Size D:	height/ thickness of material
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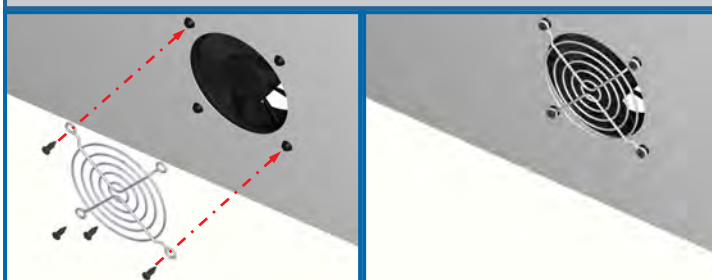


**Info!**  
With our CO2 Lasers we are able to cut out variable contours from various materials/ filter materials, foam materials and seal materials etc. (see page 28).

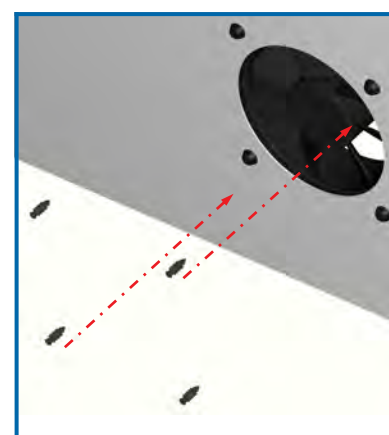
	<b>Material:</b> Plastic (PA6) <b>Colour:</b> black (other colours on request) <b>Fire resistance:</b> UL94-V-0 <b>Equals guideline:</b> REACH and RoHS	
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With our specially developed lamella rivets standard guard grills can be attached using the drilled holes of the fan sleeves feet.  
But only valid for type LM-40-xx to LM-92-xx.



The specially developed safety rivets can be plugged into the drilled holes of the fan sleeves feet.  
But only valid for types LM-40-xx to LM-92-xx .  
Thus fixed fans will survive drop and vibration tests under extraordinary conditions.




Lamella rivets Article no.
<b>LN-36-01</b>

Safety rivets Article no.
<b>SN-36-01</b>

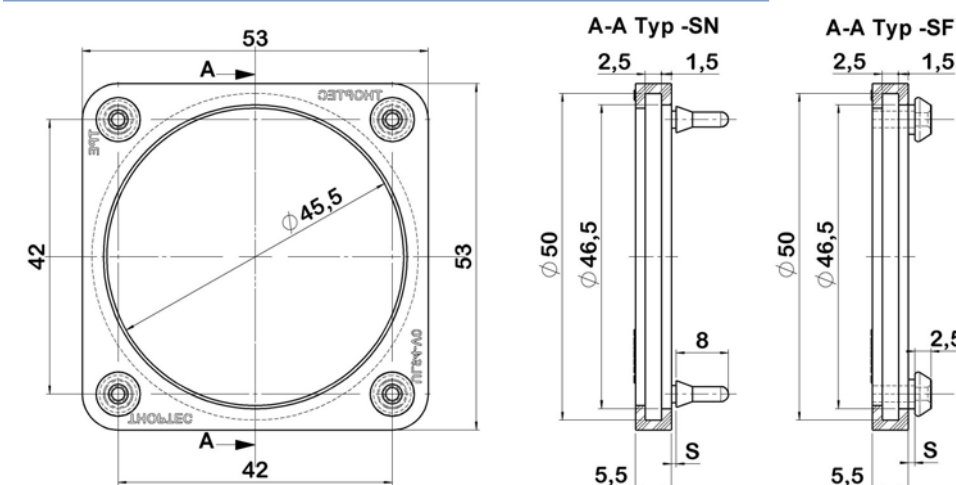
**Attention! Only valid and available for fan sleeve types LM-40-xx to LM-92-xx!**

CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

	<b>Material:</b> TPE (Thermoplastic elastomer) <b>Colour:</b> black <b>Hardness:</b> approximately 65° Shore A <b>Temperature resistance:</b> from -40 to +100° C <b>Fire resistance:</b> UL94-V-0 <b>Equals guideline:</b> REACH and RoHS
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All available accessories for the fan sleeves type LM-50-xx-xx-B42 will fit to the speaker fasteners according type SF.



**Article number:** **LSBE** **50** **SN / SF** **10 / 20** type SN with plug-in nipples  
type SF with plug-in feet

Article speaker size type code depends on panel thickness

Article no.	S	Panel thickness	<b>ADVANTAGES:</b> <ul style="list-style-type: none"> <li>Speakers can be fixed without tools, screwless, quick, simple and safe.</li> <li>Lower installation costs due to shorter installation times and not any longer needed screws.</li> <li>Prolongates lifetime of speakers while protecting against vibrations.</li> </ul>
LSBE-50-SN-10	0,75	0,75 to 1,50	
LSBE-50-SN-20	1,75	2,00 to 3,50	
LSBE-50-SF-10	1,00	0,75 to 1,25	
LSBE-50-SF-20	2,00	1,50 to 2,50	

With the speaker fastening elements you are able to install small round speakers with a diameter of 50 mm

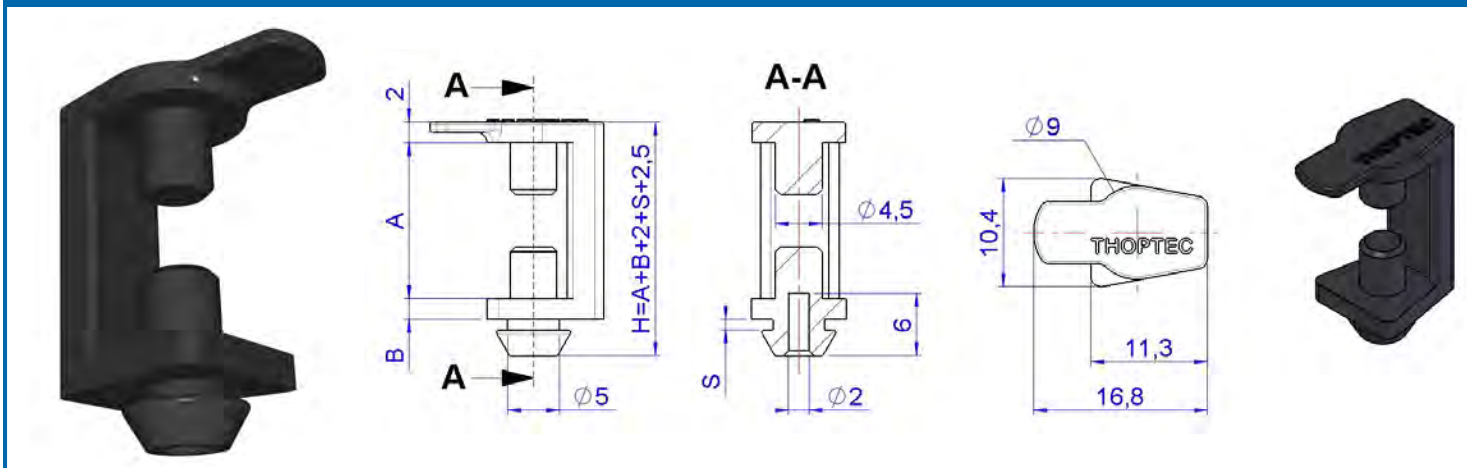
All dimensions in mm! Other sizes on request! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.





**Material:** TPE (Thermoplastic elastomer)  
**Colour:** black  
**Hardness:** approximately 65° Shore A  
**Temperature resistance:** from -40 to +100° C  
**Fire resistance:** UL94-V-0  
**Equals guideline:** REACH and RoHS

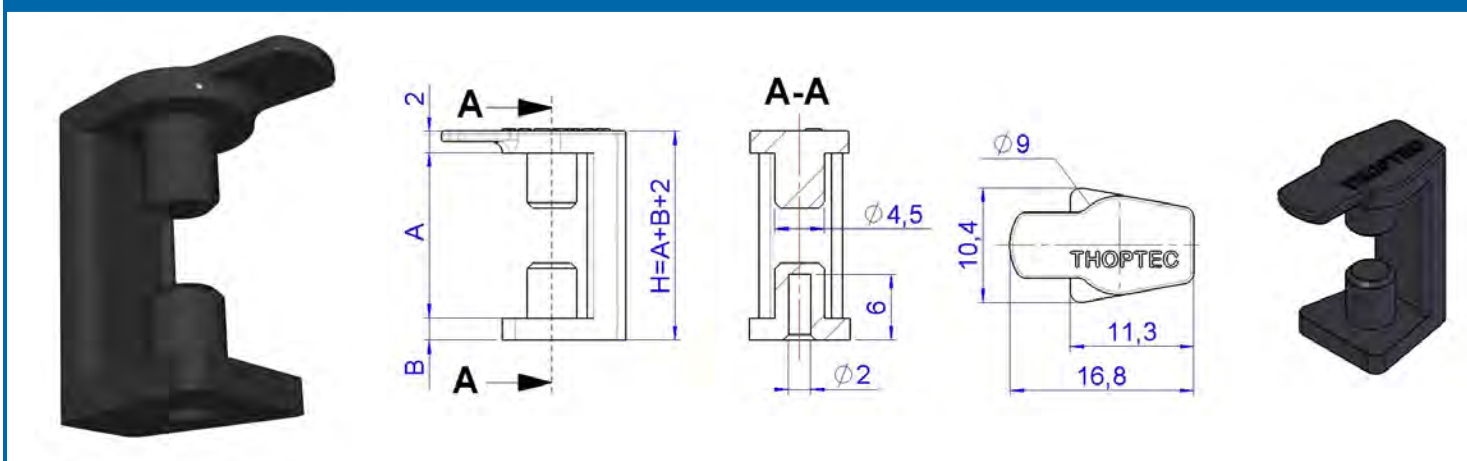
## Type RLBS with plug-in foot



**Article number:** **RLBS** **120** **20** **10 or 20**

Article      height of radial blower dimension A in 1/10 mm i.e. 120 = 12 mm      gap between blower/ panel dimension B in 1/10 mm i.e. 20 = 2 mm      panel thickness: 10 = from 0,75 to 1,25 mm 20 = from 1,50 to 2,50 mm

## Type RLBB with a drilled hole



**Article number:** **RLBB** **120** **20**

Article      height of radial blower dimension A in 1/10 mm i.e. 120 = 12 mm      gap between blower/ panel dimension B in 1/10 mm i.e. 20 = 2 mm

## Standard types / dimensions

Size A	12,0	15,0	20,0	22,0	25,0	27,0	30,0	33,0	40,0
Size B	2,0	3,0	4,0	5,0	6,0	8,0	10,0		

All dimensions in mm! Other sizes on request! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

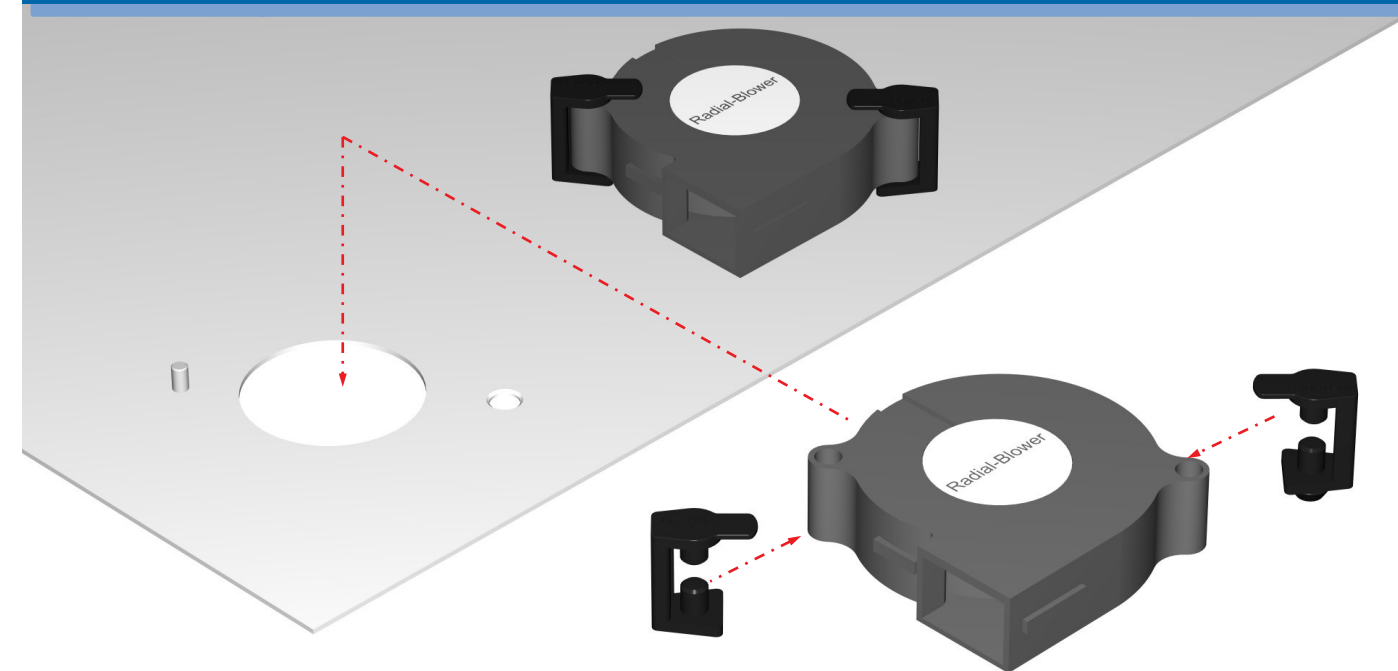
## Legend:

**Size A:** height of radial blower in mm      **Size B:** gap between radial blower and mounting panel



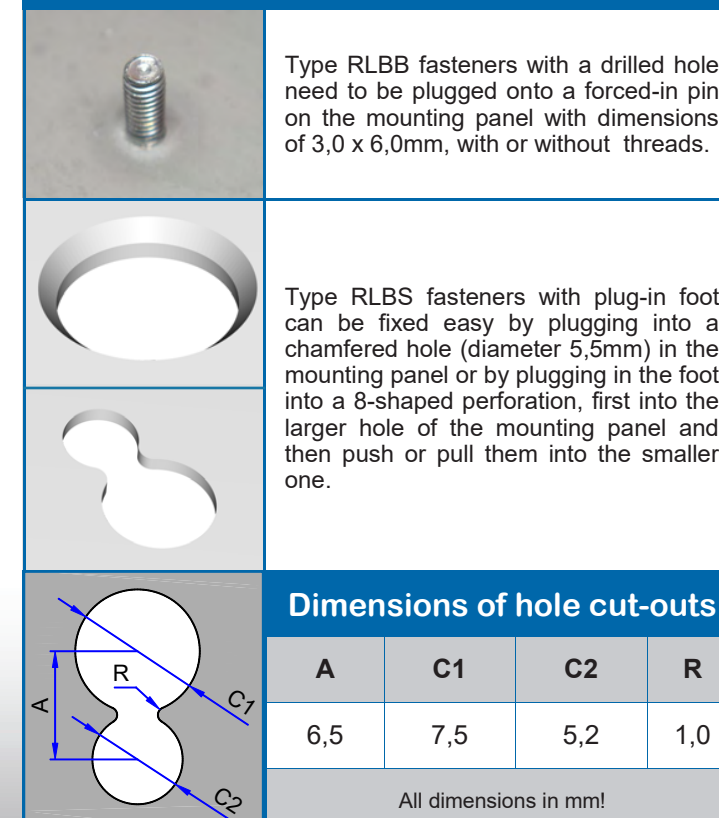
Two different types of radial blower fasteners are available, with different distance dimensions adapted to the standard fan height. Two fastening elements are required to fasten a radial blower. To mount radial blowers with the elastic fastening elements, holes, eight-shaped cut-outs or forced-in pins must be made in the mounting plate or housing wall.

For sealing the vacuum and pressure area, accessories like seal rings are available.



Radial blowers can be fixed screwless and without tools in a very easy, quick and safe way by using our radial blower fasteners.

## Mounting styles



Type RLBB fasteners with a drilled hole need to be plugged onto a forced-in pin on the mounting panel with dimensions of 3,0 x 6,0mm, with or without threads.

Type RLBS fasteners with plug-in foot can be fixed easy by plugging into a chamfered hole (diameter 5,5mm) in the mounting panel or by plugging in the foot into a 8-shaped perforation, first into the larger hole of the mounting panel and then push or pull them into the smaller one.

## Dimensions of hole cut-outs

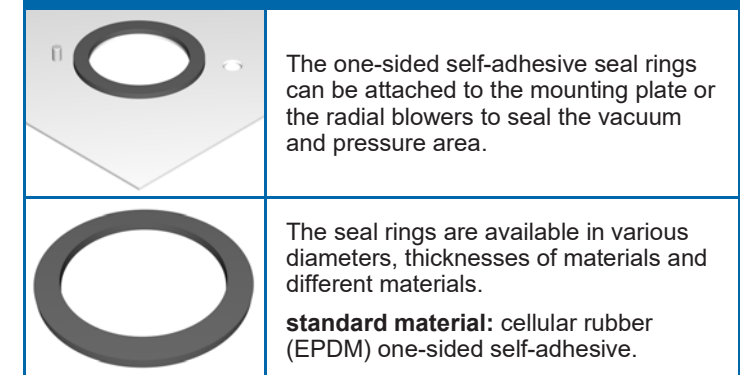
A	C1	C2	R
6,5	7,5	5,2	1,0

All dimensions in mm!

## Attention!

By adjusting the size A and the size of radius R the resisting force for mounting and dismounting the radial blower fasteners can be altered.

## Accessories / seal rings



The one-sided self-adhesive seal rings can be attached to the mounting plate or the radial blowers to seal the vacuum and pressure area.

The seal rings are available in various diameters, thicknesses of materials and different materials.  
**standard material:** cellular rubber (EPDM) one-sided self-adhesive.

## Article number:

**DR** **ID** **AD** **20 or 30**

Article      diameter inside in 1/10 mm      diameter outside in 1/10 mm      thickness of material in 1/10 mm

## Order example

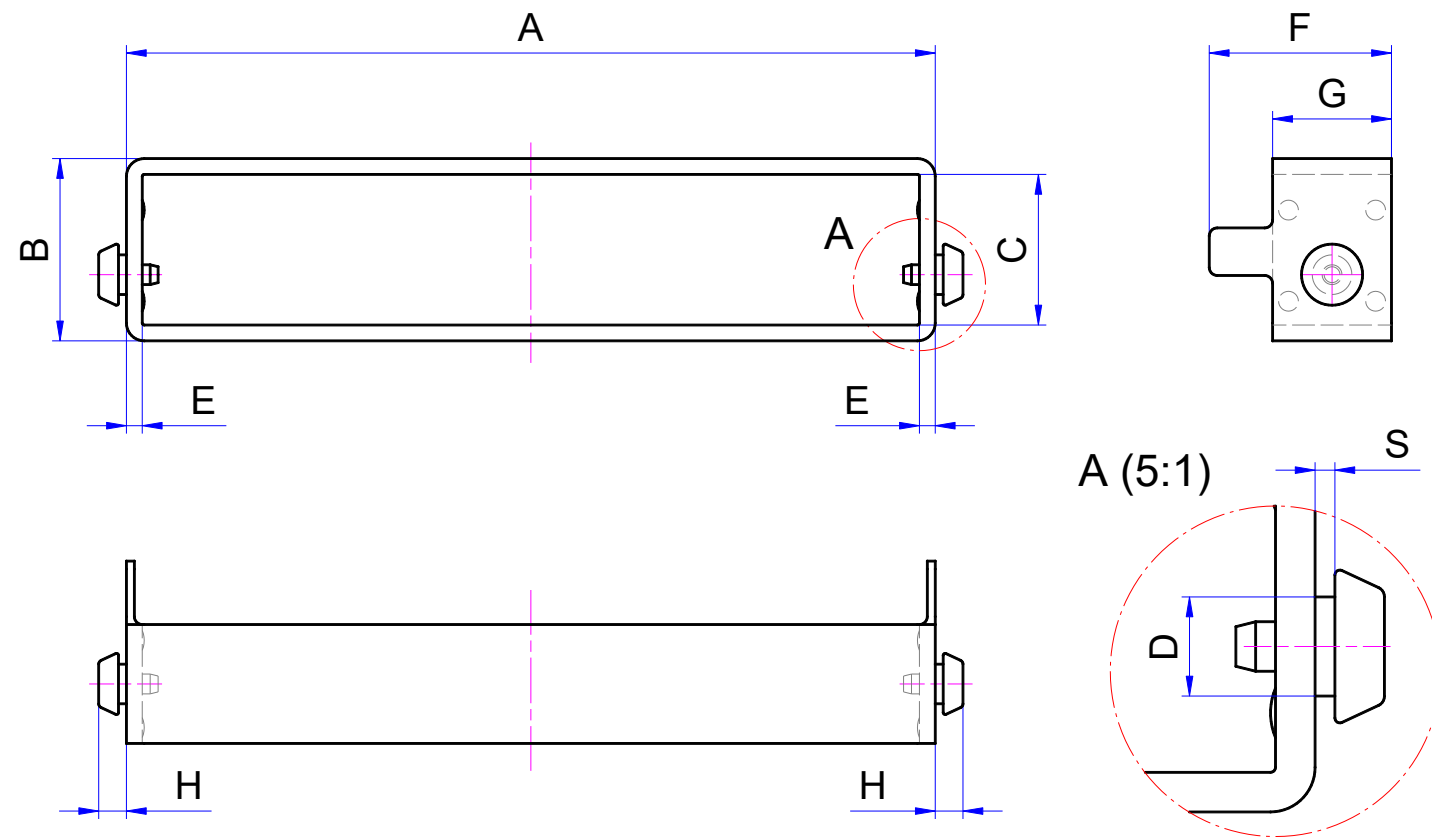
Seal ring with 34,0 mm diameter inside  
 44,0 mm diameter outside  
 2,0 mm material thickness  
**Article no. = DR-340-440-20**

## Info!

With our CO2 Lasers we are able to cut out variable contours from various materials/ filter materials, seal materials etc. (see page 28).



**Material:** TPE (Thermoplastic elastomer)  
**Colour:** black  
**Hardness:** approximately 65° Shore A  
**Temperature resistance:** from -40 to +100° C  
**Fire resistance:** UL94-V-0  
**Equals guideline:** REACH and RoHS



Article number:

<b>HDM</b>	<b>25</b>	<b>070</b>	<b>10 or 20</b>
Article	hard disk size 25 = 2,5 inch 35 = 3,5 inch	hard disk height dimension C in 1/10 mm	panel thickness 10 = from 0,75 to 1,25 mm 20 = from 1,50 to 2,50 mm

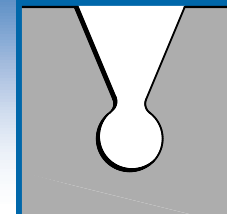
**Hard disk sleeves HDM-25-070-10 and HDM-25-070-20 are specially developed for 7 mm high SSD devices!**

Article no.	A	B	C	D	E	F	G	H	S	Panel thickness
HDM-25-070-10	73,4 *	10,0	7,0	5,0	1,5	16,0	10,0	3,5	1,0	0,75 to 1,25
HDM-25-070-20	73,4 *	10,0	7,0	5,0	1,5	16,0	10,0	4,5	2,0	1,5 to 2,5
HDM-25-095-10	73,4 *	12,5	9,5	5,0	1,5	16,0	10,0	3,5	1,0	0,75 to 1,25
HDM-25-095-20	73,4 *	12,5	9,5	5,0	1,5	16,0	10,0	4,5	2,0	1,5 to 2,5
HDM-35-254-10	106,1 *	29,4	25,4	6,0	2,0	23,0	15,0	3,5	1,0	0,75 to 1,25
HDM-35-254-20	106,1 *	29,4	25,4	6,0	2,0	23,0	15,0	4,5	2,0	1,5 to 2,5

All dimensions in mm! Other hard disk sleeves on request CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

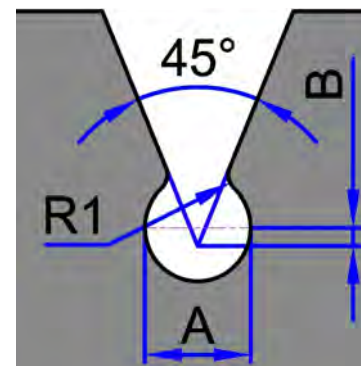
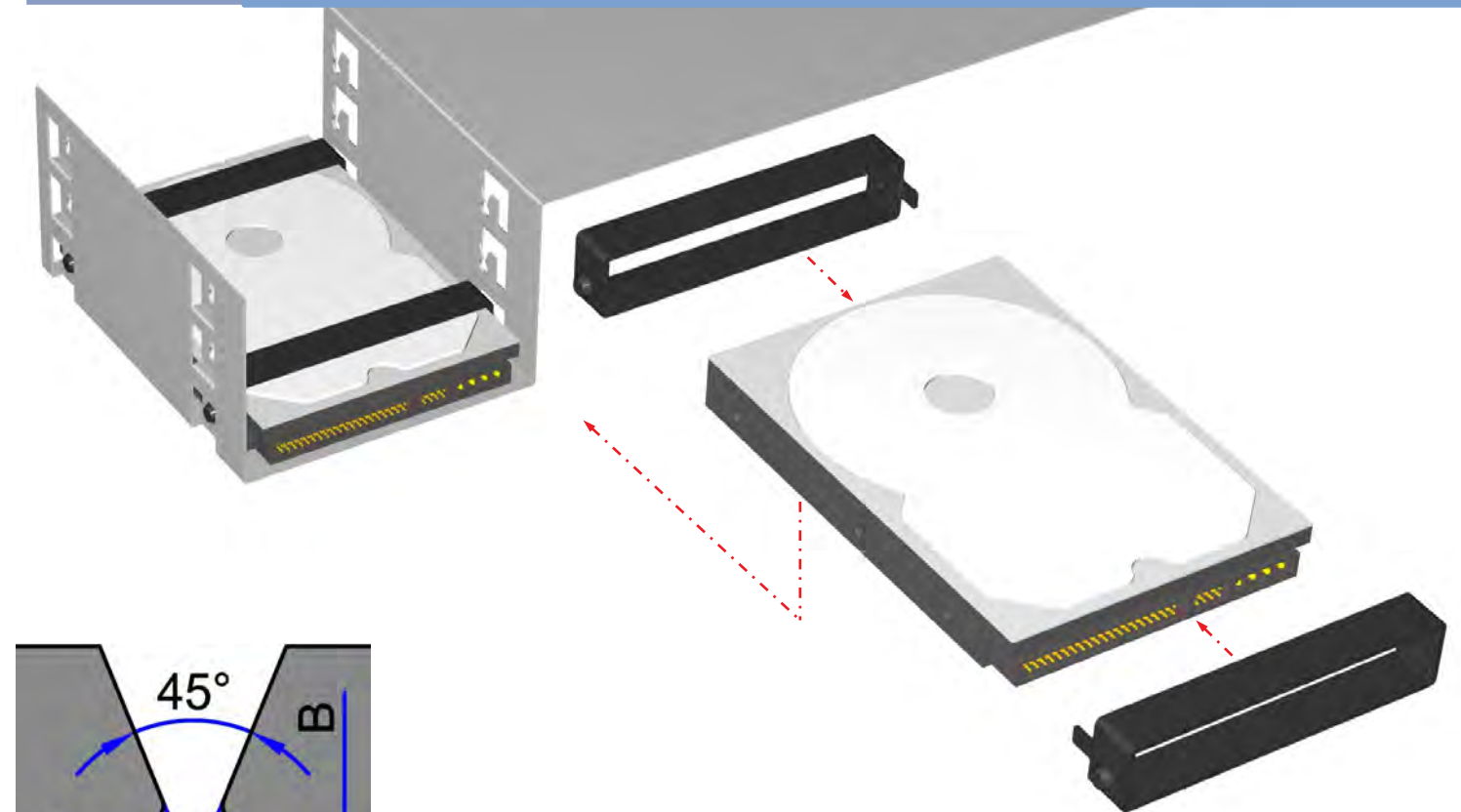
**Legend:** \* dimension A refers to size after the sleeve was pushed/ pulled over the hard disk!

<b>Size A:</b>	width outside	<b>Size D:</b>	diameter of the plug-in foot	<b>Size G:</b>	depth outside
<b>Size B:</b>	height outside	<b>Size E:</b>	gap between hard disk/ panel	<b>Size H:</b>	height of the plug-in foot
<b>Size C:</b>	height inside	<b>Size F:</b>	depth overall	<b>Size S:</b>	clearance plug-in foot



### Recommended cut out dimensions for housing boxes or mounting frames.

With the elastic hard disk sleeves you can fix hard disks without tools in a very quick and safe way. Therefore the housing boxes or mounting frames need to be manufactured/ adjusted accordingly (see recommended cut-out and mounting examples). To assemble the hard disks with housing boxes or mounting frames you always need two hard disk sleeves.



Recommended cut-out for housing boxes and mounting frames.

	A	B
for HDM-25	5,2 <sup>+0,2</sup>	0,5
for HDM-35	6,2 <sup>+0,2</sup>	1,0

### Mounting information:

Both hard disk sleeves must be pushed/ pulled over the hard disk until the internal pins of the sleeve fit into the drilled holes of the hard disk.

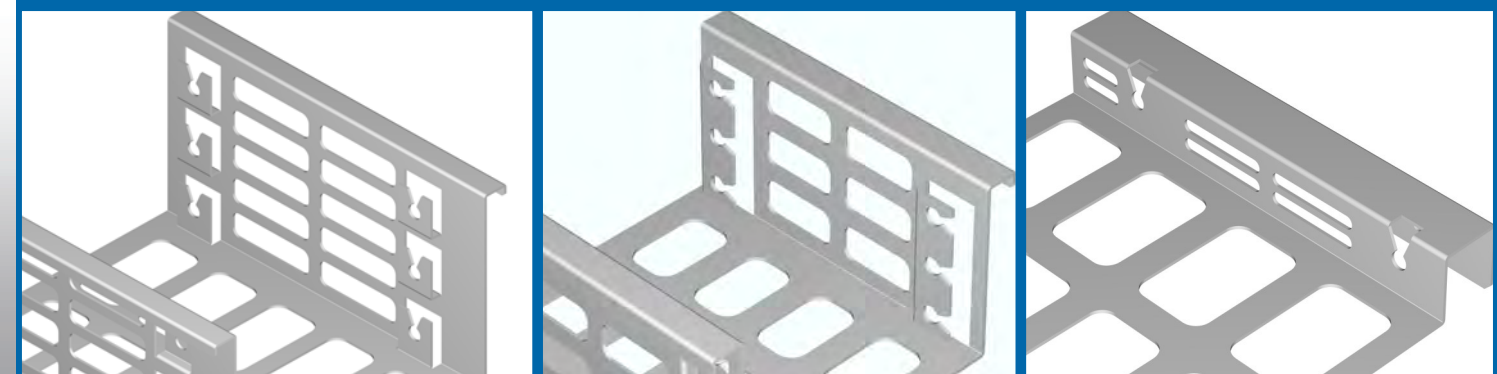
Please bear in mind that the pins are justified downwards.

Then the plug-in feet of the sleeves need to be pushed into the conical cut-outs until they snap in.

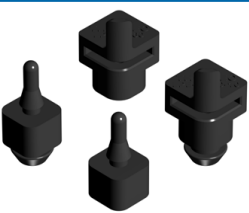
### Attention!

By adjusting the size of radius R1 and the dimension of B the resisting force for mounting and dismounting the hard disk sleeves can be altered.

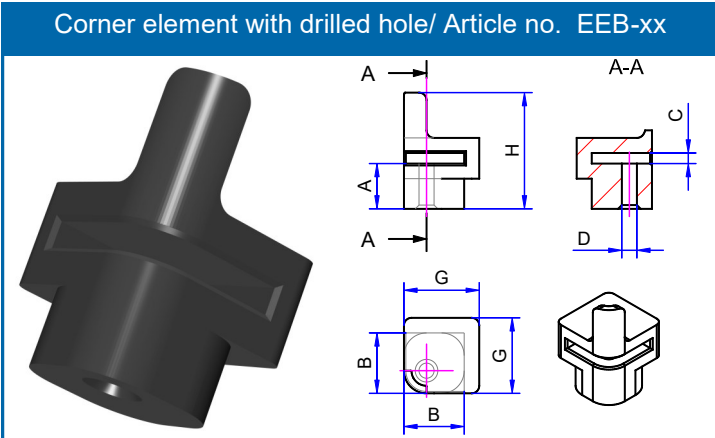
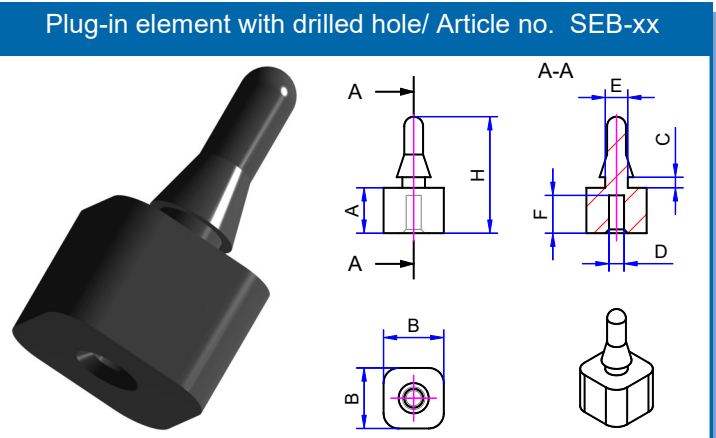
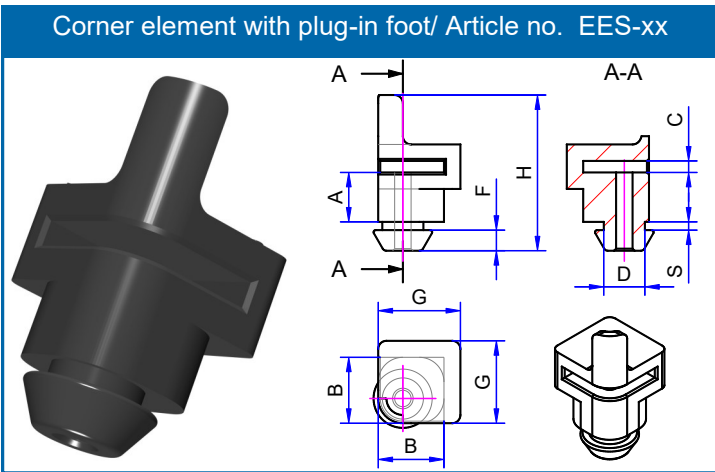
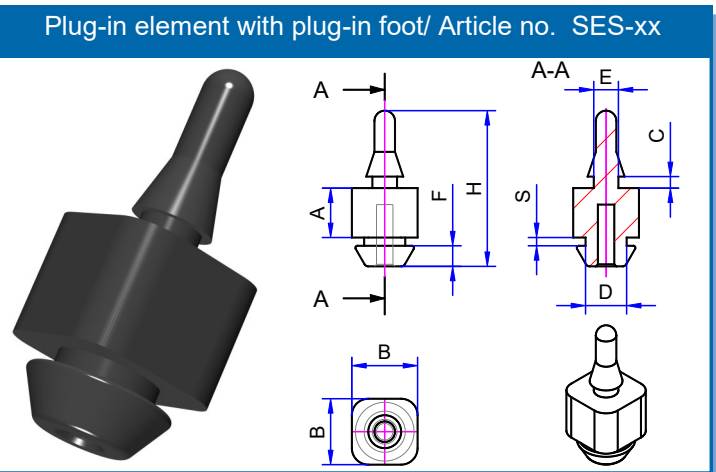
### Examples for mounting frames







**Material:** TPE (Thermoplastic elastomer)  
**Colour:** black  
**Hardness:** approximately 65° Shore A  
**Temperature resistance:** from - 40 to +100° C  
**Fire resistance:** UL94-V-0  
**Equals guideline:** REACH and RoHS



Article number: **SES / EES** **16** **60** **30 oder 40** **10 oder 20**  
**SEB / EEB**  
Article thickness of PCB in 1/10 mm dimension A in 1/10 mm dimension E in 1/10 mm 30 = for 3 - 3,5 mm drilled holes 40 = for 4 - 4,5 mm drilled holes in the printed circuit board 10 = for panel thickness from 0,75 to 1,25 mm 20 = for panel thickness from 1,50 to 2,50 mm

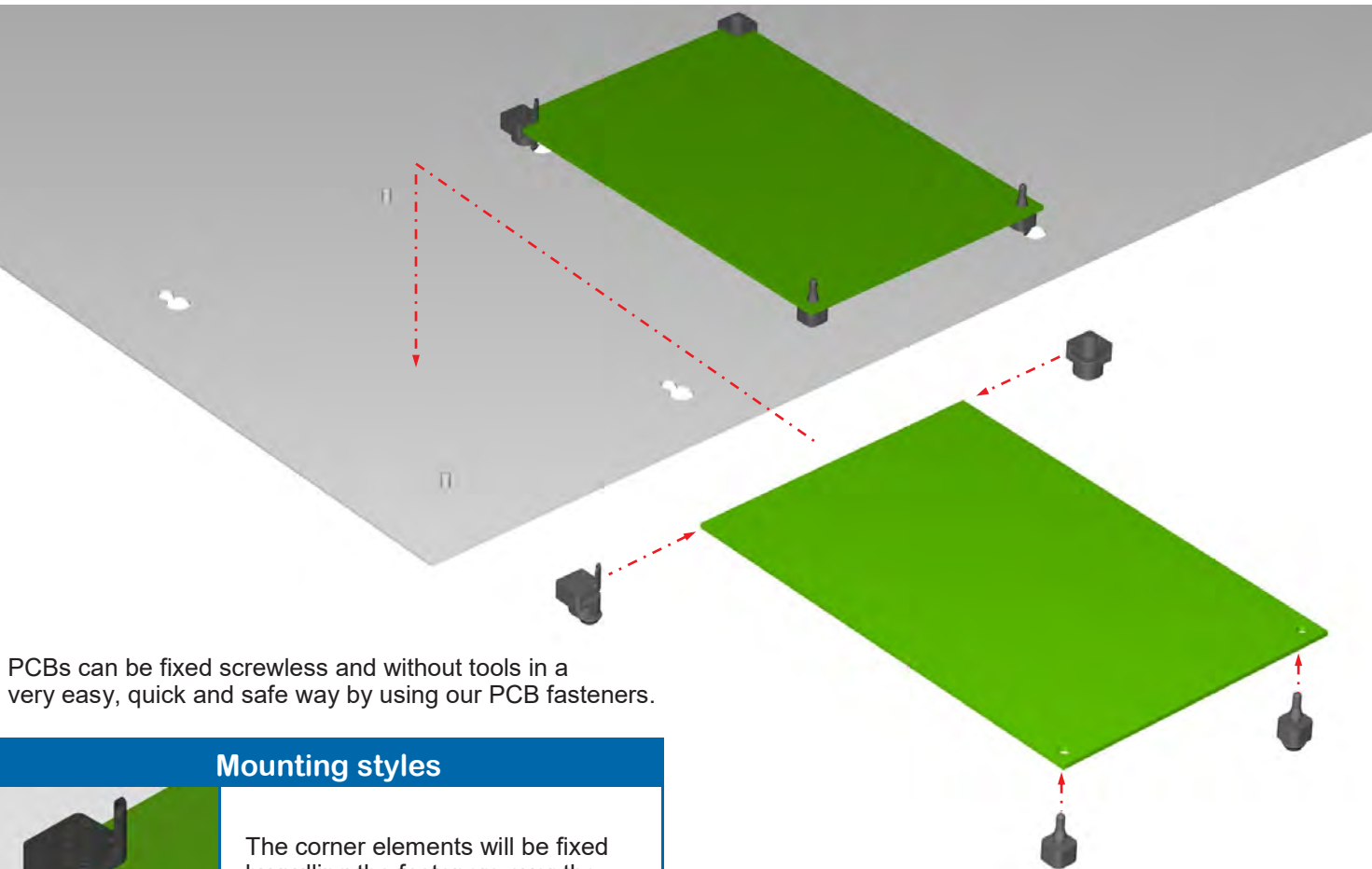
Article no.	A	B	C	D	E	F	H	S	Article no.	A	B	C	D	F	G	H	S
SES-16-50-30-10	5,0	8,0	1,4	5,0	3,0	2,5	17,9	1,0	EES-16-50-10	5,0	8,0	1,4	5,0	2,5	10,0	17,9	1,0
SES-16-60-30-10	6,0	8,0	1,4	5,0	3,0	2,5	18,9	1,0	EES-16-60-10	6,0	8,0	1,4	5,0	2,5	10,0	18,9	1,0
SES-16-80-30-10	8,0	8,0	1,4	5,0	3,0	2,5	20,9	1,0	EES-16-80-10	8,0	8,0	1,4	5,0	2,5	10,0	20,9	1,0
SES-16-100-30-10	10,0	8,0	1,4	5,0	3,0	2,5	22,9	1,0	EES-16-100-10	10,0	8,0	1,4	5,0	2,5	10,0	22,9	1,0
SES-16-50-30-20	5,0	8,0	1,4	5,0	3,0	2,5	18,9	2,0	EES-16-50-20	5,0	8,0	1,4	5,0	2,5	10,0	18,9	2,0
SES-16-60-30-20	6,0	8,0	1,4	5,0	3,0	2,5	19,9	2,0	EES-16-60-20	6,0	8,0	1,4	5,0	2,5	10,0	19,9	2,0
SES-16-80-30-20	8,0	8,0	1,4	5,0	3,0	2,5	21,9	2,0	EES-16-80-20	8,0	8,0	1,4	5,0	2,5	10,0	21,9	2,0
SES-16-100-30-20	10,0	8,0	1,4	5,0	3,0	2,5	23,9	2,0	EES-16-100-20	10,0	8,0	1,4	5,0	2,5	10,0	23,9	2,0
SES-16-50-40-10	5,0	8,0	1,4	5,0	4,0	2,5	18,9	1,0	EEB-16-50	5,0	8,0	1,4	2,0	-	10,0	14,4	-
SES-16-60-40-10	6,0	8,0	1,4	5,0	4,0	2,5	19,9	1,0	EEB-16-60	6,0	8,0	1,4	2,0	-	10,0	15,4	-
SES-16-80-40-10	8,0	8,0	1,4	5,0	4,0	2,5	21,9	1,0	EEB-16-80	8,0	8,0	1,4	2,0	-	10,0	17,4	-
SES-16-100-40-10	10,0	8,0	1,4	5,0	4,0	2,5	23,9	1,0	EEB-16-100	10,0	8,0	1,4	2,0	-	10,0	19,4	-
SES-16-50-40-20	5,0	8,0	1,4	5,0	4,0	2,5	19,9	2,0	We are able to realize various dimensions of distances acording size A !								
SES-16-60-40-20	6,0	8,0	1,4	5,0	4,0	2,5	20,9	2,0									
SES-16-80-40-20	8,0	8,0	1,4	5,0	4,0	2,5	22,9	2,0									
SES-16-100-40-20	10,0	8,0	1,4	5,0	4,0	2,5	24,9	2,0									
SEB-16-60-30	6,0	8,0	1,4	2,0	3,0	5,0	15,4	-									
SEB-16-80-30	8,0	8,0	1,4	2,0	3,0	5,0	17,4	-									
SEB-16-100-30	10,0	8,0	1,4	2,0	3,0	5,0	19,4	-									
SEB-16-60-40	6,0	8,0	1,4	2,0	4,0	5,0	16,4	-									
SEB-16-80-40	8,0	8,0	1,4	2,0	4,0	5,0	18,4	-									
SEB-16-100-40	10,0	8,0	1,4	2,0	4,0	5,0	20,4	-									

All dimensions in mm! CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.



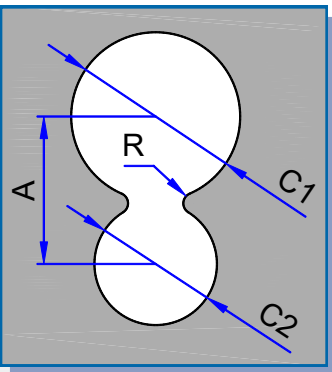
For being able to fix PCBs with our elastic PCB fastening elements you must provide the mounting panel or housing wall either with drilled holes, 8-shaped hole cut-outs or forced-in pins.

The mounting styles of the elements are depending on the type of PCB. The PCB fasteners can be fixed either by pulling the fasteners over the PCB edges or by drilled holes in the printed circuit board.



PCBs can be fixed screwless and without tools in a very easy, quick and safe way by using our PCB fasteners.

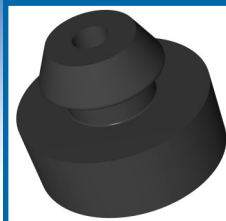
Mounting styles	
	The corner elements will be fixed by pulling the fasteners over the PCB edges.
	The plug-in elements will be plugged into the drilled hole and pulled out on the backside of the printed circuit board.
	Types of SES and EES fasteners with plug-in feet can be fixed easy by plugging into a chamfered hole (diameter 5,5mm) in the mounting panel or by plugging-in the foot into a 8-shaped perforation, first into the larger hole of the mounting panel and then push or pull them into the smaller one.
	Types of SEB and EEB fasteners with a drilled hole need to be plugged onto a forced-in pin on the mounting panel with dimensions of 3,0 x 6,0mm, with or without threads.



**Attention!**

By adjusting the size of dimension A and radius R the resisting force of mounting and dismounting the hard disk sleeves can be altered.

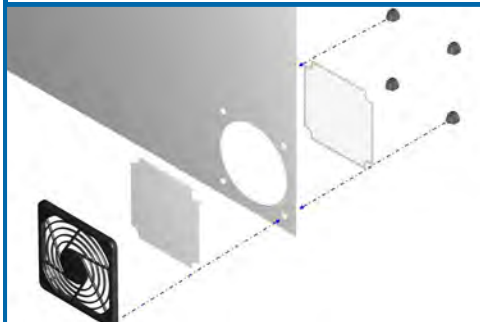
Dimensions of hole cut-outs			
A	C1	C2	R
6,5	7,5	5,2	1,0
All dimensions in mm!			



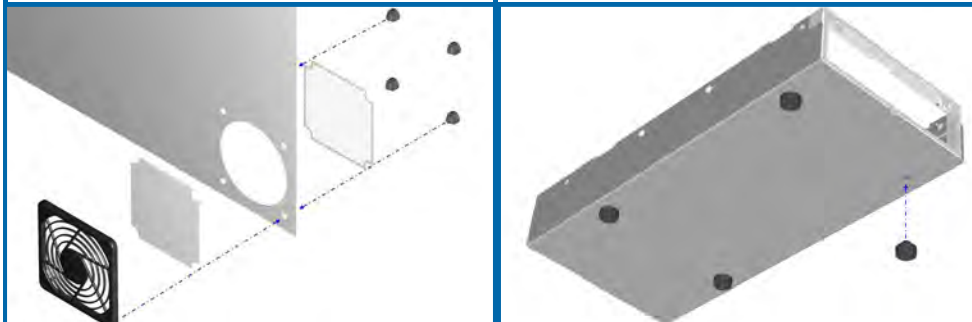
**Material:** TPE (Thermoplastic elastomer)  
**Colour:** black  
**Hardness:** approximately 65° Shore A  
**Temperature resistance:** from -40 to +100° C  
**Fire resistance:** UL94-V-0  
**Equals guideline:** REACH and RoHS

### Application examples

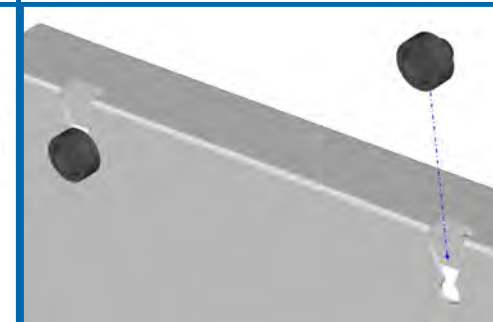
In combination with our universal mounting elements you can fix all available accessories for axial fan sleeves.



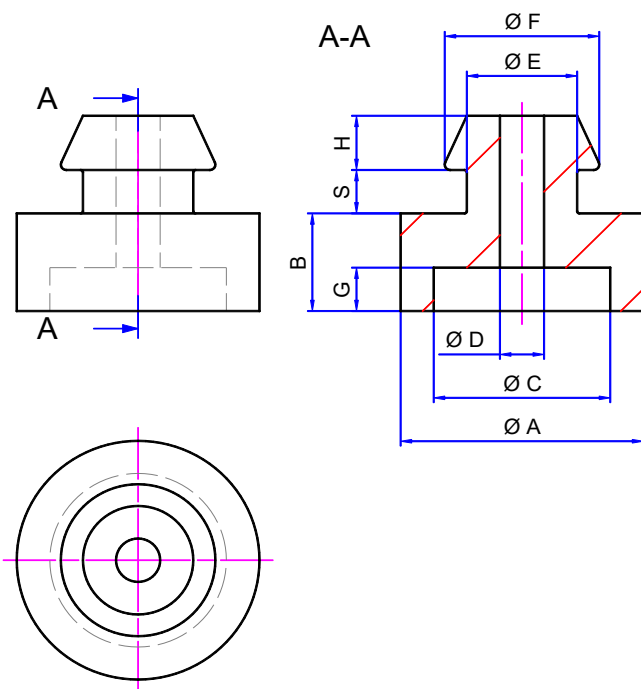
The universal mounting elements can be used for instance as feet for housing boxes.



The universal mounting elements are also suitable as a stop buffer.



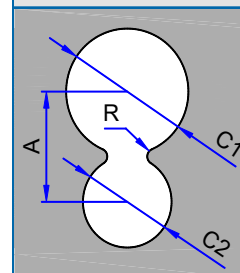
On request the universal mounting elements are also available in various dimensions.



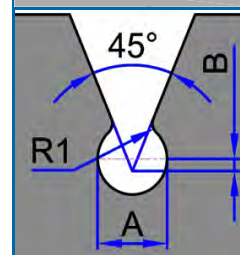
### Mounting styles



Universal mounting elements can be fixed by plugging the foot into a chamfered hole (diameter 5,2 mm) in the mounting panel or by plugging the foot into a 8-shaped perforation, first into the larger hole of the mounting panel and then push or pull it into the smaller one.



A	C1	C2	R
6,5	7,5	5,2	1,0



The plug-in foot of the universal mounting element can also be pushed into a conical cut-out, until it snaps in.

A	B
5,2	0,5

All dimensions in mm!

Article number:

**UME** — **110** — **45** — **10 or 20**

Article      diameter size A in 1/10 mm      height dimension B in 1/10 mm      panel thickness:  
 10 = from 0,75 to 1,25 mm  
 20 = from 1,50 to 2,50 mm

Article no.	A	B	C	D	E	F	G	H	S	Panel thickness
UME-110-45-10	11,0	4,5	8,0	2,0	5,0	7,0	2,0	2,5	1,0	0,75 bis 1,25
UME-110-45-20	11,0	4,5	8,0	2,0	5,0	7,0	2,0	2,5	2,0	1,50 bis 2,50

All dimensions in mm!      Other sizes on request!      CAD Data sheets on [www.thoptec.com](http://www.thoptec.com) and on „TraceParts“.

## You name it! We make it!

We dispose of injection moulding machines for small as well as for bigger parts with closing forces up to 100 tons.



On request we are able to **support** our clients in **developing and designing** their customized injection moulded parts by our **own CAD department**.

According to your specific needs in terms of use, material properties, surface and colour we are able to produce high quality injection moulded parts.

Advantages of the smaller machines are:

By using these machines the tool holder takes over the function of the master form.

The tool size can be reduced and therefore tool expenses drop down.

The machines are working with a considerable improved level of energy consumption and are equipped with a self contained cooling system that enables a resource-saving production.

Do not hesitate to contact us or send us your CAD data sheets, drawings or samples. We submit an offer based on prices for tool costs and parts for various production batches.

Examples:

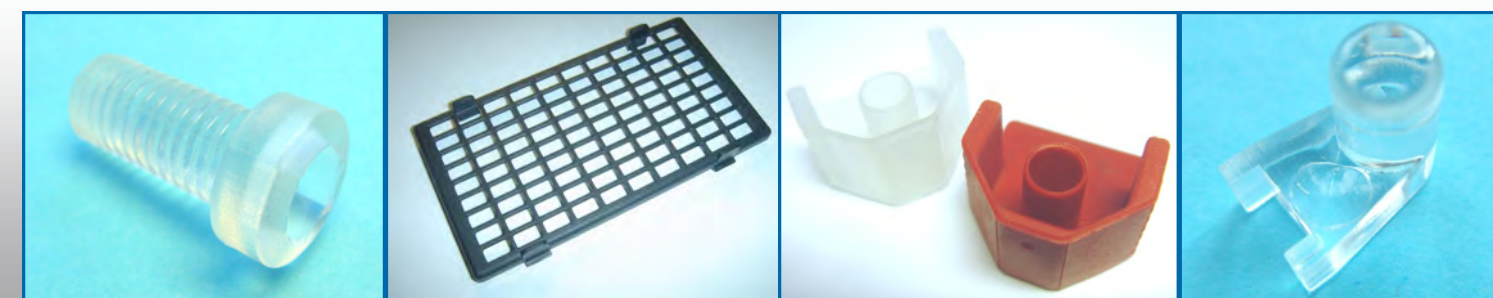


Lens holder with inside thread

Cover cap for DVI-interface

Ergo transmitter with holder

Choke holder



Special screw M10 x 22

Clip on coarse dust filter holder

Dust protection cover

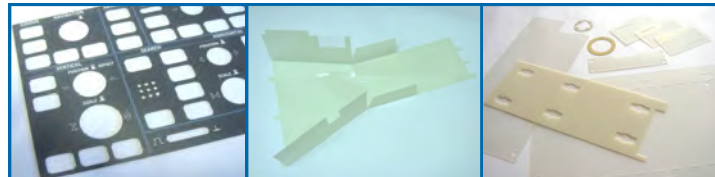
LED-illuminated push-button



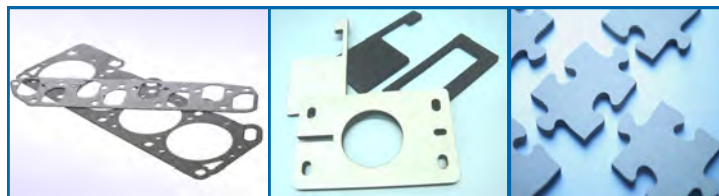
With our large size CO2 Lasers we are able to cut out variable contours from various materials/ filter materials, foam materials and seal materials etc.



Foam materials such as for packaging etc. and filter materials can be cut out precisely without fraying.



Foils and films made of by Lexan®, Hostaphan®, Mylar® etc. can be cut and/ or perforated, then be bend at the perforation.



Seals made of various materials and also cellular rubber, even one-sided self-adhesive, can be cut out precisely.



By using different chlorine and fluorinefree plastics such as PMMA (acrylic, Plexiglas®), polycarbonate, polystyrene, polyoxymethylene, polyester, acrylonitrile butadiene styrene etc. plates, front panels or various other things can be cut out or engraved.



Also timber, wood-based material, cardboard packaging, paper, cartons, textiles, leather and various other materials can be cut or engraved in a very detailed way.

Our customers benefit from a clean, non-contacted and accurate laser service portfolio up to 1540x1120mm, with a high-level working precision and quality.



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more Distributors on the next page



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Phone: +49 (0)7634 59459-0 info@sepa-europe.com  
 www.sepa-europe.com



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***Don't screw, just plug in!***



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Fon.: +49 8092 2320-518

info@thoptec.de  
www.thoptec.com

since 2003