

# Smoke ducts and fittings, rectangular



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# General

## Technical data for standard sizes

### Cross-sectional area, $A_c$ [m<sup>2</sup>]

b \ a	200	250	300	400	500	600	800	1000	1200
100	0,02	0,03	0,03	0,04					
150	0,03	0,04	0,05	0,06	0,08	0,09			
200	0,04	0,05	0,06	0,08	0,10	0,12	0,16		
250		0,06	0,08	0,10	0,13	0,15	0,20	0,25	
300			0,09	0,12	0,15	0,18	0,24	0,30	0,36
400				0,16	0,20	0,24	0,32	0,40	0,48
500					0,25	0,30	0,40	0,50	0,60
600						0,36	0,48	0,60	0,72
800							0,64	0,80	0,96
1000								1,00	1,20

$$A_c = a \times b$$

### Circumference, $O$ [m]

b \ a	200	250	300	400	500	600	800	1000	1200
100	0,6	0,7	0,8	1,0					
150	0,7	0,8	0,9	1,1	1,3	1,5			
200	0,8	0,9	1,0	1,2	1,4	1,6	2,0		
250		1,0	1,1	1,3	1,5	1,7	2,1	2,5	
300			1,2	1,4	1,6	1,8	2,2	2,6	3,0
400				1,6	1,8	2,0	2,4	2,8	3,2
500					2,0	2,2	2,6	3,0	3,4
600						2,4	2,8	3,2	3,6
800							3,2	3,6	4,0
1000								4,0	4,4

$$O = 2 \times (a + b)$$

### Hydraulic diameter, $d_h$ [mm]

b \ a	200	250	300	400	500	600	800	1000	1200
100	133	143	150	160					
150	171	188	200	218	231	240			
200	200	222	240	267	286	300	320		
250		250	273	308	333	353	381	400	
300			300	343	375	400	436	462	480
400				400	444	480	533	571	600
500					500	545	615	667	706
600						600	686	750	800
800							800	889	960
1000								1000	1091

$$d_h = 4 \times A_c / O = 2 \times a \times b / (a + b)$$

### Equivalent diameter, $d_e$ [mm]

b \ a	200	250	300	400	500	600	800	1000	1200
100	152	169	183	207					
150	189	210	229	260	287	310			
200	219	244	267	305	337	366	414		
250		274	299	344	381	414	470	518	
300			328	378	421	458	521	575	621
400				438	489	534	610	675	732
500					547	599	688	763	829
600						657	757	842	916
800							876	978	1068
1000								1095	1199

$$d_e = 2 \times b \times (\pi^{2-n} \times (1 + a/b)^{1+n} / (a/b)^3)^{1/(n-5)}$$

where  $n = 1 / (1,05 \times \log(\text{Re}) - 0,45)$

where  $\text{Re} = v_m \times d_h / \nu$

where  $v_m = 5 \text{ m/s}$

and  $\nu = 0,000\ 000\ 101\ 312 \times t + 0,010\ 013\ 001\ 3$

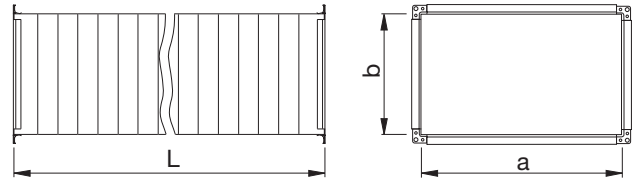
where  $t = 20^\circ\text{C}$

# Duct

# LKRSS



## Dimensions



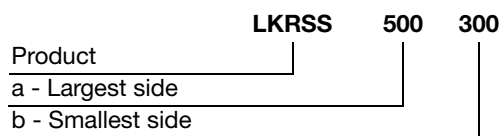
## Description

Straight duct, stiffened with transverse corrugations, which reduces the risk of noise generation. Larger dimensions have stiffening internal rods.

Ducts are normally supplied with a strong joining profile RJFP at each end.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example



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# Bend

# LBRSS



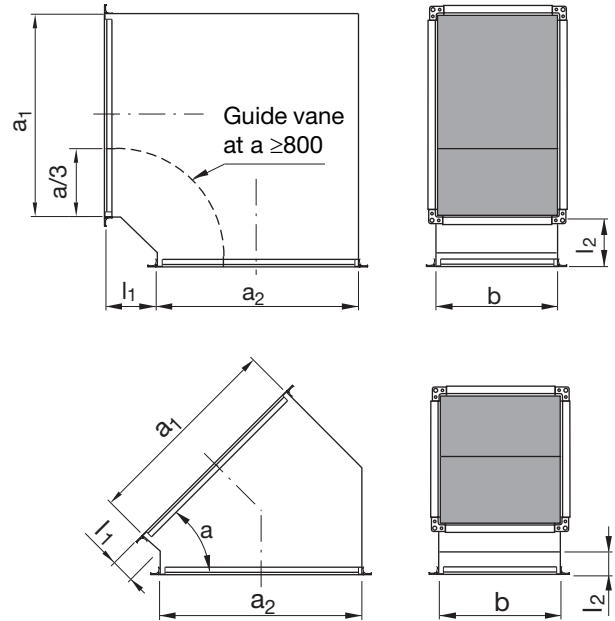
## Description

Bend with sharp outer corner, stiffened with corrugation. The bend is delivered with 90° or 45° angles and joining profile RJFP at both ends. Other leg lengths and angles can also be ordered.

Standard design  $l_1 = l_2 = 125$  mm.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Dimensions



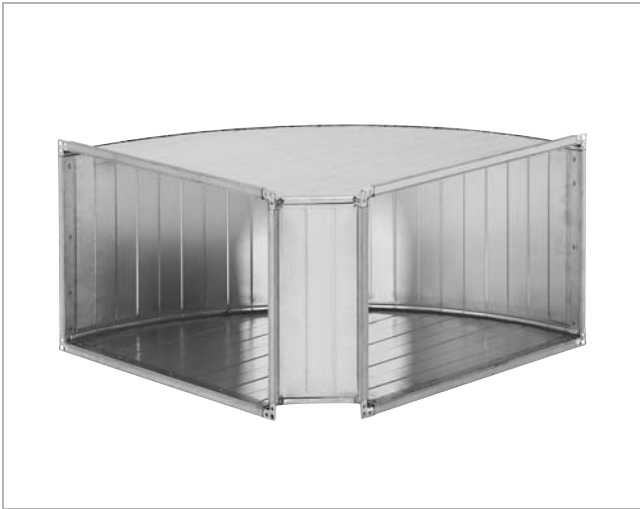
## Ordering example

	LBRSS	500	300	500	90	125	125
Product							
Form side	$a_1$						
Curved side	$b$						
Form side	$a_2$						
Angle	$\alpha$						
Leg length	$l_1$						
Leg length	$l_2$						

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# Bend

# LBXRSS



## Description

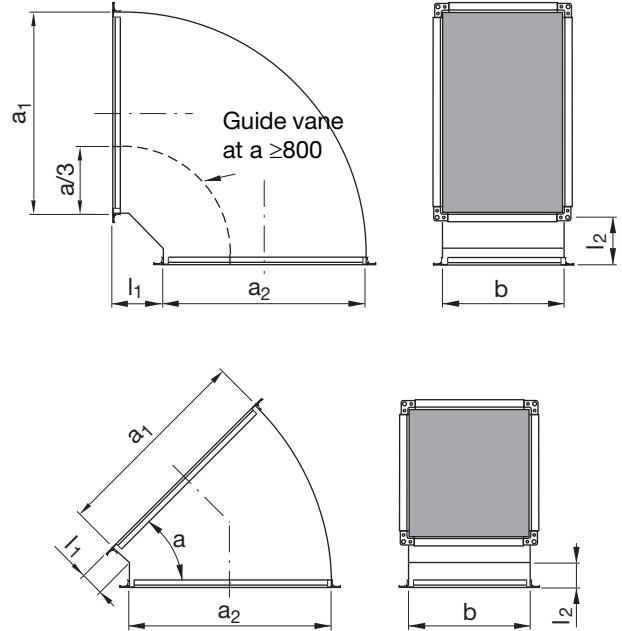
Bend with rounded outer corner, stiffened with corrugations.

The bend is delivered with 90° or 45° angles and joining profiles type RJFP at both ends. Other leg lengths and angles can also be ordered.

Standard design  $l_1 = l_2 = 125$  mm.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Dimensions



## Ordering example

	LBXRSS	500	300	500	90	125	125
Product							
Form side	$a_1$						
Curved side	$b$						
Form side	$a_2$						
Angle	$\alpha$						
Leg length	$l_1$						
Leg length	$l_2$						

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# S-bend

# LBSRSS



## Description

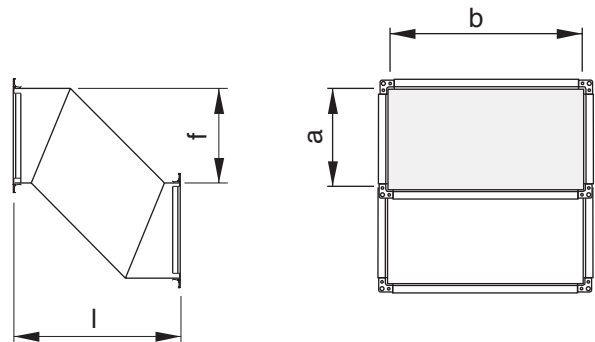
Used for deflections of the duct system, for example where ducts cross.

Has a joining profile type RJFP at both ends, and is stiffened by corrugations.

A special relationship is needed between the a-dimension, fall f and length l for the LBSR to retain its cross-sectional area and not restrict the air flow. For this reason, standard lengths and standard drops have been prepared.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Dimensions



a mm	l std mm	f std mm
100	400	300
150	400	300
200	400	300
250	400	300
300	500	300
350	500	300
400	600	400
450	600	400
500	600	400
600	700	400
700	800	500
800	900	500
900	1000	500
1000	1100	500

## Ordering example

	LBSRSS	300	600	300	400
Product					
Form side	a				
Curved side	b				
Fall	f				
Length	l				

# Taper

# LDRSS



## Description

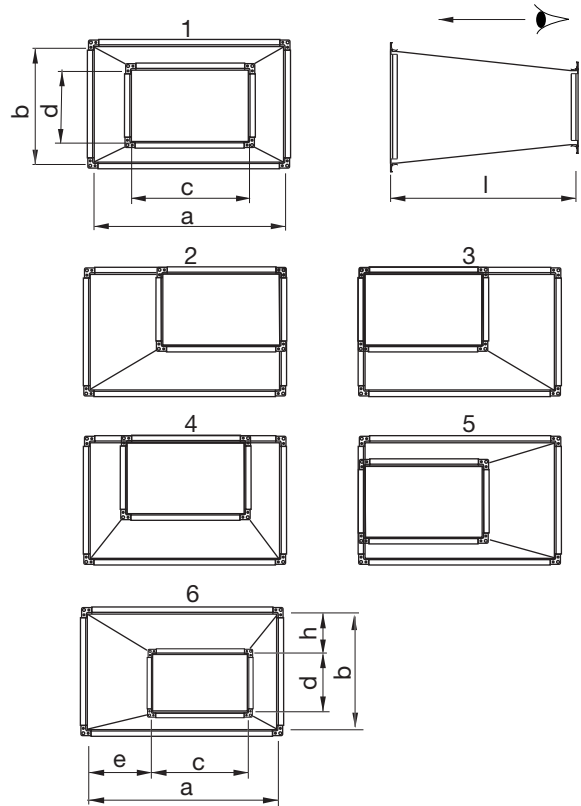
The taper is used as transition between different duct dimensions. The larger dimensions are available with offsets as in the coded sketches.

Dimension changes have a joining profile type RJFP at both ends, and are stiffened by corrugations.

Measures e and h only need to be given for alternative 6. Negative values for e, for example, mean that e is outside side a.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Dimensions



a mm	l std mm
100	300
150	300
200	300
250	300
300	300
350	300
400	450
450	450
500	450
600	450
700	450
800	600
900	600
1000	600

## Ordering example

	<b>LDRSS</b>	<b>500</b>	<b>300</b>	<b>300</b>	<b>200</b>	<b>1</b>	<b>450</b>	.....	.....
Product									
Large end a									
Large end b									
Small end c									
Small end d									
The alternative displacements 1 – 6 are seen from the cxd end									
Length l									
Displacement e									(Only at alternative 6.)
Displacement h									(Only at alternative 6.)



# Compensator

# LCRSS



## Description

Used to balance the elongation of a rectangular smoke control duct when it gets warm and to prevent longitudinal forces resulting from this.

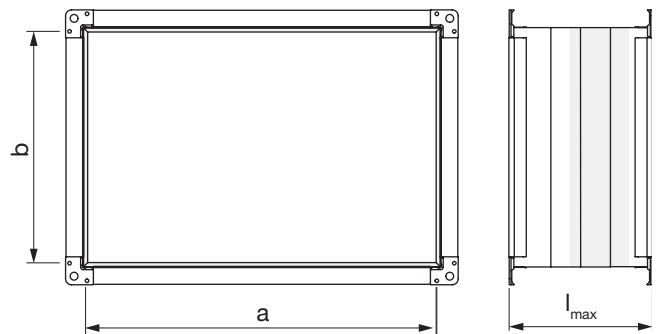
When the compensator is installed it should be fully elongated. When fully elongated  $l_{max}$  is 240 mm and flexible part is 100 mm.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example

Product \_\_\_\_\_ **LCRSS**

## Dimensions



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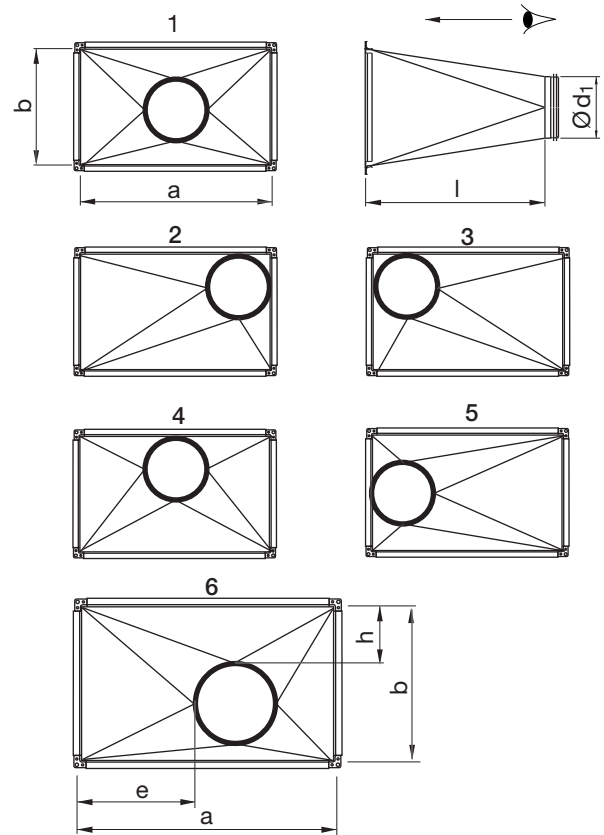
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# Rect-to-round transition

# LORUSS



## Dimensions



## Description

Rect-to-round transition are used between rectangular and circular ducts. The rectangular connection has joining profiles type RJFP and the circular connection has Safe seal. The rectangular connection is available with offsets as in the coded sketches.

Measures e and h only need to be given for alternative 6. Negative values for e, for example, mean that e is outside side a.

The Rect-to-round transition LORU can also be manufactured with other designs of the circular connection. It then changes name as follows:

- LORNP: Transition with male coupling (without gasket)
- LORMF: Transition with female coupling
- LORFL: Transition with flange coupling

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example

	<b>LORUSS</b>	<b>500</b>	<b>300</b>	<b>160</b>	<b>450</b>	<b>1</b>	.....	.....
Product								
Largest side	a							
Smallest side	b							
Diameter	Ød <sub>1</sub>							
Length	l							
The alternative displacements are seen from the circular end					1 - 6			
Displacement	e					(Only at alternative 6.)		
Displacement	h					(Only at alternative 6.)		

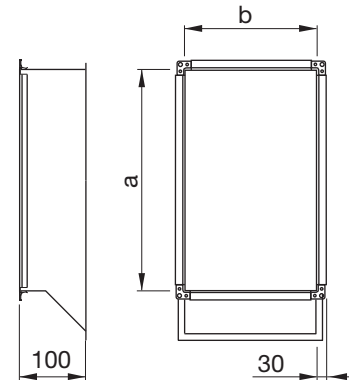
a mm	l std mm
100	300
150	300
200	300
250	300
300	300
350	300
400	450
450	450
500	450
600	450
700	450
800	600
900	600
1000	600

# Collar

# LARSS



## Dimensions



Sloping design: FAS

## Description

The collar is used for connection to rectangular duct. The smaller joint end is provided with joining profiles type RJFP. The larger one has an edge, for fixing with blind rivets or self-tapping screws, but can also be given a folding tab to facilitate assembly.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example

	LARSS	500	300	100	FAS
Product					
Form side	a				
Curved side	b				
Length					
<b>Design</b>	sloping	FAS *			
	straight	RAK			

\* FAS can only be selected if the length is 50 mm or more.

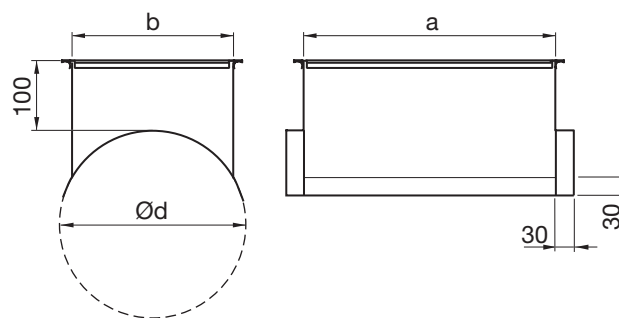
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# Collar in circular duct

# LPSRSS



## Dimensions



## Description

The collar is used for connection to circular duct. The rectangular end is provided with joining profiles type RJFP. The rounded end has an edge, for fixing with blind rivets or self-tapping screws.

Other lengths can also be supplied.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example

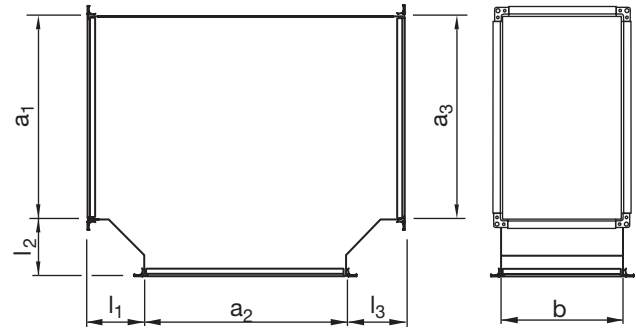
	LPSRSS	600	300	400	100
Product					
Side	a				
Side	b				
Diameter	Ød				
Length					

# T-piece

# LTRSS



## Dimensions



## Description

A T-piece which is provided with joining profiles type RJFP and is stiffened with corrugations.  
 Standard design  $l_1 = l_2 = l_3 = 125$  mm.  
 Other leg lengths can also be supplied.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

## Ordering example

	LTRSS	600	800	600	400	125	125	125
Product								
Side $a_1$								
Side $a_2$								
Side $a_3$								
Side $b$								
Leg length $l_1$								
Leg length $l_2$								
Leg length $l_3$								

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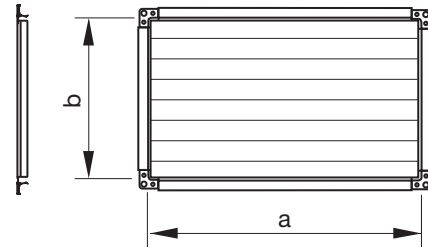
# End cover

# LEPRSS

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## Dimensions



### Description

Used as end cover in duct.

The edges are equipped with joining profiles type RJFP .

The end cover is stiffened with corrugations.

The product is CE marked according to EN 12101-7 and used in a rectangular smoke control system - single compartment (see declaration of performance).

### Ordering example

Product	LEPRSS	500	300
Largest side	a		
Smallest side	b		