Rectangular ducts and fittings

We reserve the right to make changes in the dimensions and technical data products due to their continuous improvement

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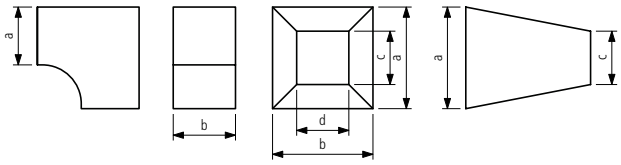
TECHNICAL INFORMATION

About the System

We present you a production range of rectangular ducts and fittings.
The catalogue includes rectangular ducts and fittings with dimensions as required by the standard:
PN-EN 1505:2001 (Straight Rectangular Sheet metal Ventilation Ducts and Fittings), and all standards referenced therein.
The area of ventilation ducts and fittings is measured in accordance with DIN 18379 (German Construction Contract Procedures. Part C: General Technical Specifications For Building Works – Room Ventilation Systems). They are used in low and medium pressure building ventilation and air-conditioning systems. Stainless steel or aluminium ducts and fittings can be fabricated on request where better protection against corrosion is needed. We also offer unusual fittings, not included in the catalogue, based on your drawing.

Dimensions

The nominal dimension, which is conventionally used to identify and calculate straight ducts and fittings, corresponds to the internal dimensions of sides a and b, where a stands for the visible side (see figure 1). The side lengths of the minor end of the transition fitting are identified as c and d, where c stands for the visible side.
Dimension L represents the useful length of the straight duct, i.e. a dimension that affects the total length of duct system.
Dimension I represents the useful length of the fitting, i.e. a dimension that affects the total length of duct system.



Dimensions of rectangular ducts and fittings are treated as standard from 130 mm to 2500 mm size of any side. Ducts and fittings with a smaller or larger size in relation to the stated subject to a special order. Imposition of the entire surface, and the term of the contract shall be determined on an individual basis.

Air Tightness

The ventilation ducts are manufactured in two tightness classes as defined in the standards: PN-B-76001 (Ventilation Ducts – Air Tightness, Requirements and Testing) and PN-EN 1507 (Building Ventilation – Straight Rectangular Ventilation Ducts and Fittings – Duct Strength and Air Tightness Requirements): tightness class A: for normal designs – typically; tightness class B: for designs with enhanced air tightness

Air tightness of ducts	*Leakage limit* (f_{max}) $m^3s^{-1}m^{-2}$	*Static pressure limits* (p_s) *Pa*			
		Negative pressure for all classes	*Overpressure for the classes* 1	2	3
A	$0{,}027 \times p_{test}^{0{,}65} \times 10^{-3}$	200	400		
B	$0{,}009 \times p_{test}^{0{,}65} \times 10^{-3}$	500	400	1000	2000
C	$0{,}003 \times p_{test}^{0{,}65} \times 10^{-3}$	750	400	1000	2000
D*	$0{,}001 \times p_{test}^{0{,}65} \times 10^{-3}$	750	400	1000	2000

**Special purpose ducts*

Design

The rectangular ducts and fittings are designed with slip-fit connections, either welded or button punched. The ducts and fittings are available in low and medium pressure versions (minimum negative pressure/maximum overpressure):
- design class N (low pressure design): it is a standard design ranging from -400Pa to +1000Pa
- design class S (medium pressure design): from -1000Pa to 2500Pa

Deviations and sheet metal thickness are selected based on:
- length of the longer side of the straight duct
- length of the longest side of the connection cross-section of the fitting

The table below shows allowable deviations and minimum sheet metal thicknesses for individual dimensions .

length of the longer side [mm]	*allowable deviations of the duct side [mm]*	class N minimum sheet metal thickness [mm]	class S minimum sheet metal thickness [mm]
100–500	0–4	0,6	0,7
501–1000	0–4	0,8	0,9
1001–2000	0–4	1	1,1
2001–4000	0–5	1,1	1,2

The rectangular components can be made of other materials, such as acid-proof or aluminium sheet

length of the longer side [mm]	*acid-proof sheet*	*aluminium sheet*
100 - 500	0,6	0,8
501 - 1000	0,6	0,8
1001 - 2000	0,8	1,0

TECHNICAL INFORMATION

Tolerances and Deviations

For straight ducts, the tolerance of length L is ±0.005L
Angle tolerance is ±2°.
Deviations from values a, b, c, d, e and f range from 0mm to -4mm

Duct dimensions, which include matching cross-section fields Ac, hydraulic diameter dh, equivalent diameter de and duct area per metre A, are shown in table 3.

Table 3 (below)
Duct dimensions and values as required by the PN-EN 1505 standard (Straight Rectangular Sheet metal Ventilation Ducts and Fittings)..

Labelling

ALNOR products are furnished with the construction industry's B sign and product codes according to their technical specifications contained in this catalogue.

Rectangular ducts and fittings have the hygiene certificates:
a) HK/B/1652/03/2007 for those made of aluminium sheet
b) HK/B/1652/01/2007 for those made of galvanised or acid-proof sheet

side length [mm]	100	150	200	250	300	*400*	*500*	*600*	*800*	*1000*	*1200*	
200	0,02	0,03	0,04									A_c
	133	171	200									d_h
	149	186	218									d_e
	0,6	0,7	0,8									A_l
250	0,025	0,038	0,05	0,063								A_c
	143	188	222	250								d_h
	165	206	241	273								d_e
	0,7	0,8	0,9	1								A_l
300	0,03	0,045	0,06	0,075	0,09							A_c
	150	200	240	273	300							d_h
	180	224	262	296	327							d_e
	0,3	0,9	1	1,1	1,2							A_l
400	0,04	0,06	0,08	0,1	0,12	0,16						A_c
	160	218	267	308	343	400						d_h
	205	255	299	337	373	436						d_e
	1	1,1	1,2	1,3	1,4	1,6						A_l
500		0,075	0,1	0,13	0,15	0,2	0,25					A_c
		231	286	333	375	444	500					d_h
		283	331	374	413	483	545					d_e
		1,3	1,4	1,5	1,6	1,8	2					A_l
600		0,09	0,12	0,15	0,18	0,24	0,3	0,36				A_c
		240	300	353	400	480	545	600				d_h
		307	359	406	448	524	592	654				d_e
		1,5	1,6	1,7	1,8	2	2,2	2,4				A_l
800			0,16	0,2	0,24	0,32	0,4	0,48	0,64			A_c
			320	381	436	533	615	686	800			d_h
			410	463	511	598	675	745	872			d_e
			2	2,1	2,2	2,4	2,6	2,8	3,2			A_l

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TECHNICAL INFORMATION

Tolerances and Deviations

Table 3 (cont)
Duct Dimensions and Measures

side length [mm]	*100*	*150*	*200*	*250*	*300*	*400*	*500*	*600*	*800*	*1000*	*1200*	
1000				0,25	0,3	0,4	0,5	0,6	0,8	1		A_c
				400	462	571	667	750	889	1000		d_h
				512	566	662	747	825	965	1090		d_e
				2,5	2,6	2,8	3	3,2	3,6	4		A_l
1200					0,36	0,48	0,6	0,72	0,96	1,2	1,44	A_c
					480	600	706	800	960	1091	1200	d_h
					614	719	812	896	1049	1184	1308	d_e
					3	3,2	3,4	3,6	4	4,4	4,8	A_l
1400						0,56	0,7	0,84	1,12	1,4	1,68	A_c
						622	737	840	1018	1167	1292	d_h
						771	871	962	1125	1270	1403	d_e
						3,6	3,8	4	4,4	4,8	5,2	A_l
1600						0,64	0,8	0,96	1,28	1,6	1,92	A_c
						640	762	873	1067	1231	1371	d_h
						819	925	1022	1195	1350	1491	d_e
						4	4,2	4,4	4,8	5,2	5,6	A_l
1800							0,9	1,08	1,44	1,8	2,16	A_c
							783	900	1108	1286	1440	d_h
							976	1078	1261	1424	1573	d_e
							4,6	4,8	5,2	5,6	6	A_l
2000							1	1,2	1,6	2	2,4	A_c
							800	923	1143	1333	1500	d_h
							1024	1131	1323	1494	1650	d_e
							5	5,2	5,6	6	6,4	A_l

The area of the cross-section is the product of multiplying the lengths of sides a and b.
The area of the duct is the product of multiplying the internal perimeter and the length of the duct.
Hydraulic diameter: in relation to the rectangular duct, it is a diameter of the round duct at which pressure loss is the same for identical air flow rates and friction factors.

Formula $d_h = 2 \times a \times b/a + b$.
Equivalent diameter: in relation to the rectangular duct, it is a diameter of the round duct at which pressure loss is the same for identical air flow rates and friction factors.

Rigidity

The rectangular ducts and fittings are made more rigid through transverse corrugation of sheet metal.
In addition, the ducts are stiffened with galvanised stiffening rods as shown in figure 2.

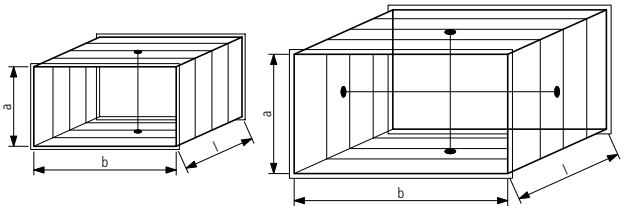

Fig 2

How to increase the rigidity of ventilation ducts is presented in table 4.

Table 4
How to increase the rigidity of ventilation ducts with stiffening rods

A (mm)	*B (mm)*	*L (mm)*	*number of stiffening rods*
<1000	<1000	<1000	0
<1000	≥1000	<1000	1
<1000	1000–1500	<1000	2
<1000	1500–2000	1500–2000	4
1000–1500	1000–1500	<1000	one cross
1000–1500	1000–1500	1000–1500	two crosses

The bends and bends are stiffened with turning vanes as required by the PN-EN 1505 standard (Straight Rectangular Sheet metal Ventilation Ducts and Fittings).
Bends are advisable for systems with low flow rates/pressures and smaller side lengths a < 400mm. Turning vanes are not required for bends and bends with angles <45°.
How to adjust turning vanes is shown in table 5 and figure 3.

Ventilation Duct Area

The area of rectangular ventilation ducts is measured in accordance with DIN 18379 (German Construction Contract Procedures. Part C: General Technical Specifications For Building Works – Room Ventilation Systems).
The ducts measuring less than 1.0 m2 in area are classified as fittings with an area of 1.0 m2. The fittings measuring less than 1.0 m2 in area are classified as fittings with an area of 1.0 m2.

Designing

For your ease of designing ventilation systems, an AutoCAD add-on called Wentyle has been developed to support system drawing and calculations. The software is distributed free of charge. Components of the program's database have the same identification codes as in our catalogue.

Connections

Ventilation ducts are joined together as required by the PN-B-760012 standard (Connections of Sheet metal Ventilation Equipment, Ducts and Fittings). Mounting frames with sheet metal joining profiles and corners are used to connect ventilation ducts with rectangular pieces of duct system. The profile size depends on the length of the side.
How to use mounting frames with rectangular ducts and fittings is shown in table 6.

Table 5
How to use mounting frames with ventilation ducts and fittings in standard galvanised sheet metal designs

length of the side [mm]	≤1000	>1000	>2500
profile size	P20	P30	P40

Corners and sealing profiles are sealed with modelling clay.

Acid-proof steel mounting frames and corners are generally used for the acid-proof sheet ducts and fittings, and aluminium mounting frames and corners for the aluminium ducts and fittings.
How to use mounting frames with the ventilation ducts and fittings on standard acid-proof or aluminium sheet designs

length of the side [mm]	≤1000	>1000	>2500
profile size	PQ20	PQ30	PQ30

Table 6
Layout of turning vanes as required by the PN-EN 1505 standard (Straight Rectangular Sheet metal Ventilation Ducts and Fittings).

width of duct a [mm]]	*number of turning vanes*	*distance between turning vanes [mm]*		
		a_1	a_1	a_1
> 400 ≤ 800	1	a/3		
> 800 ≤ 1600	2	a/4	a/2	
> 1600 ≤ 2000	3	a/8	a/3	a/2

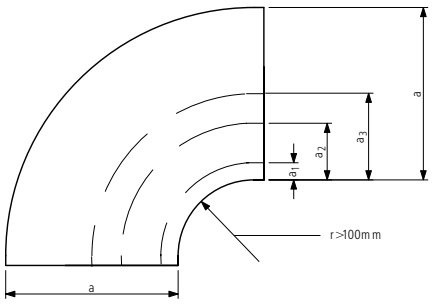

fig 3

Duct

QDN

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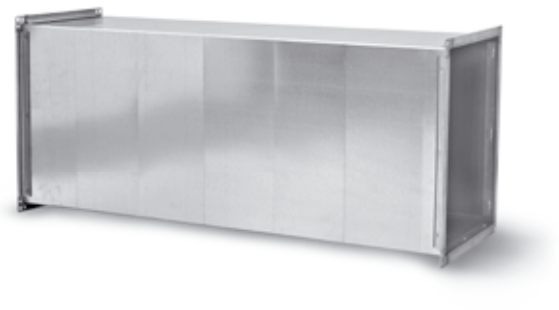
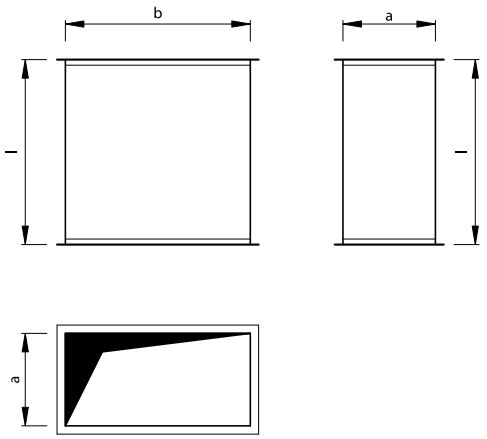


Dimensions



Description

On its ends the rectangular duct has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. In addition, depending on its size, it is stiffened with galvanised rods. For the purpose of production, transport and installation standardisation, the ducts are fabricated in the following sections:
If a or b < 500, then L = 1250mm
If a or b > 500, then L = 1500mm

Description

If the duct is to be closed otherwise than with an end cover, please specify the following as your remarks:
LR – loose end cover
BR – no end cover
Z – end cap

Example identification

product code **QD - N - OCY - 500 × 300 - 1500**

type
N
S
OCY
KWS
ALU
a
b
l

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
l	*length*

Inclined Rectangular Duct

QD1

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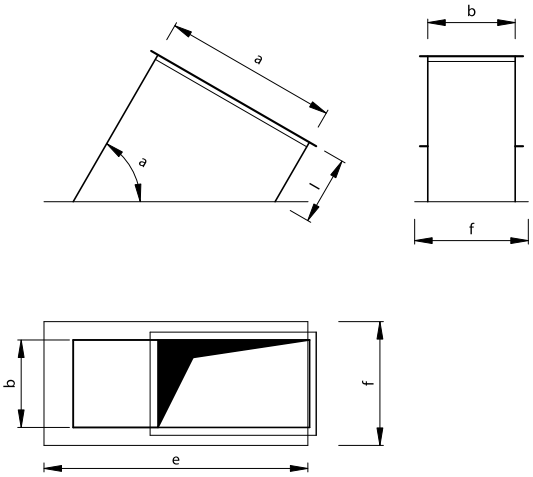
Dimensions



Description

Inclined rectangular duct of roof hood type, provided on one end with a sheet metal profile. A base of any size can be attached to the other end. The inclination angle of the hood ranges from 90 to 100 degrees, depending on request.

Example identification

product code **QD1 - N - OCY - 500 × 300 - 1500 - 45 - 800 × 500**

type
N
S
OCY
KWS
ALU
a
b
l
α
e
f

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
l	*length*
α	*angle*
e	*dimension of base a*
f	*dimension of base b*

Bend

QBF

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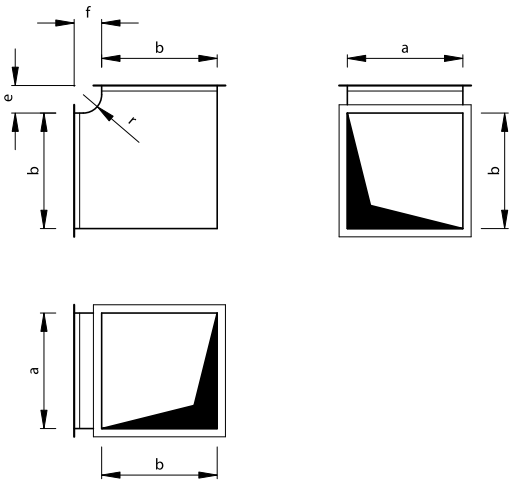
Dimensions



Description

On its ends the 90°bend has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. Bends are advisable for systems with low flow rates/pressures and smaller side lengths b < 400mm.
Generally, r = 120mm.
An bend is usually used to divert the direction of the duct system by 90 degrees without changing the cross-section of the duct.

Example identification

product code **QBF - N - OCY - 500 × 300 - 30 - 30 - 120**

type
N
S
OCY
KWS
ALU
a
b
e
f
r

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
e	*extension (by default, e = 150 mm)*
f	*extension (by default, f = 150 mm)*
r	*radius(by default, r = 120 mm)*

Only 90° bends are available.
The components are usually fabricated with standard dimensions, and there is no need to specify them.

Variable Cross-Section Bend

QBFR

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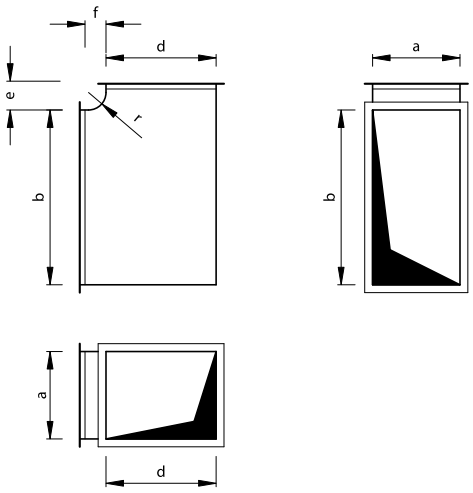
Dimensions



Description

On its ends the 90° bend has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. Bends are advisable for systems with low flow rates/pressures and smaller side lengths b < 400mm. Generally, r = 120mm. An bend is usually used to divert the direction of the duct system by 90 degrees while changing the dimensions of the duct.

Example identification

product code **QBFR - N - OCY - 500 x 300 - 400 - 30 - 30 - 120**

type
N
S
OCY
KWS
ALU
a
b
d
e
f
r

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
d	*extract height*
e	*extension (by default, e=150 mm)*
f	*extension (by default, f=150 mm)*
r	*radius(by default, r =120 mm)*

Only 90° bends are available.
The components are usually fabricated with standard dimensions, and there is no need to specify them.

Bend
QB

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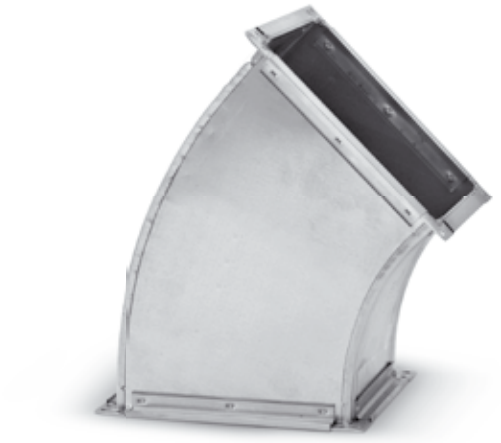
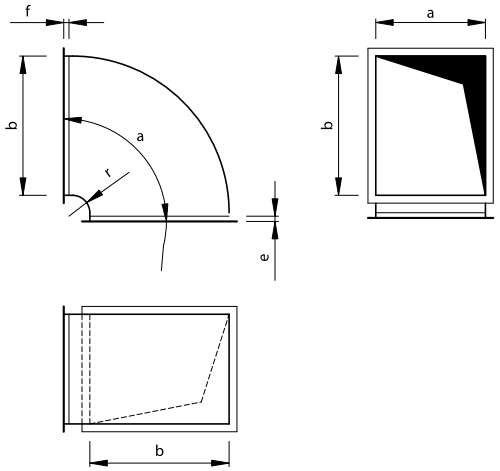


Dimensions



Description

On its ends the standard 90° bend has mounting frames with sheet metal joining profiles, outer and inner corners, and is stiffened with transverse sheet corrugation. Bends are advisable for systems with high flow rates/pressures and greater side lengths b > 400mm. Standard radius r = 120mm. Standard angle a = 90°.

Description

A bend is usually used to divert the direction of the duct system by an angle while maintaining the cross-section of the duct.

Example identification

product code **QB - N - OCY - 500 × 300 - 30 - 30 - 120 - 90**

- *type*
  - *N*
  - *S*
  - *OCY*
  - *KWS*
  - *ALU*
- *a*
- *b*
- *e*
- *f*
- *r*
- *α*

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
e	*extension (by default, e=30 mm)*
f	*extension (by default, f=30 mm)*
r	*radius(by default, r =120 mm)*
α	*angle (default angle=90°)*

Variable Cross-Section Bend

QBR

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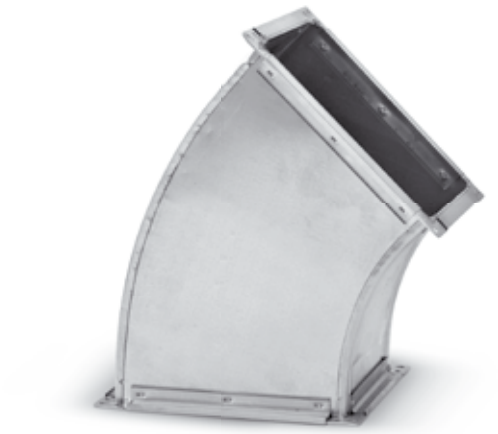
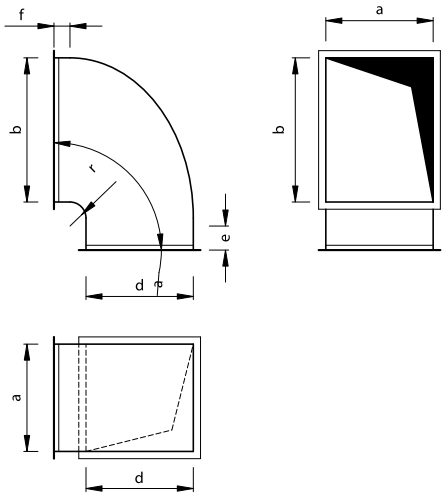


Dimensions



Description

On its ends the standard 90° bend has mounting frames with sheet metal joining profiles, outer and inner corners, and is stiffened with transverse sheet corrugation.
Bends are advisable for systems with high flow rates/pressures and greater side lengths b > 400mm.

Standard radius r = 120 mm.
Standard angle $\alpha = 90°$

Description

An Bend is usually used to divert the direction of the duct system by 90 degrees while changing the dimensions of the duct.

Example identification

product code **QBR - N - OCY - 500 × 300 - 400 - 30 - 30 - 120 - 90**

type
N
S
OCY
KWS
ALU
a
b
d
e
f
r
α

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*extract height*
d	*extract height*
e	*extension (by default, e = 30 mm)*
f	*extension (by default, f = 30 mm)*
r	*radius(by default, r = 120 mm)*
α	*angle (default angle = 90°)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Diffuser Bend

QBR1

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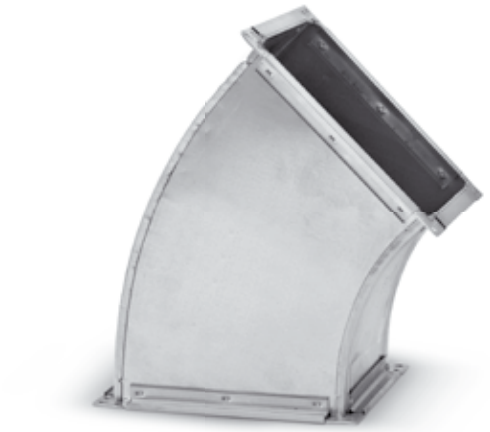
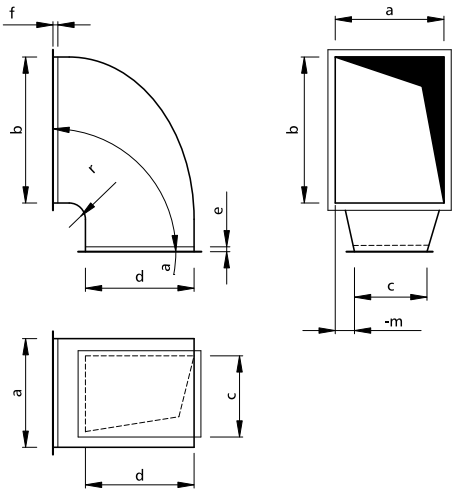


Dimensions



Description

On its ends the standard 90° bend has mounting frames with sheet metal joining profiles, outer and inner corners, and is stiffened with transverse sheet corrugation. Bends are advisable for systems with high flow rates/pressures and greater side lengths a > 400mm.
Standard radius r = 120mm
Standard angle $\alpha = 90°$

Description

An bend is usually used to divert the direction of the duct system by 90 degrees while changing the dimensions of the duct in two planes. No turning vanes are used in diffuser bends. Component reinforcement upon request.

Example identification

product code **QBR1 - N - OCY - 500 x 300 x 400 - 200 - 30 - 30 - 120 - 90**

type
N
S
OCY
KWS
ALU
a
b
d
e
f
r
α

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*outlet width*
b	*extract height*
c	*outlet width*
d	*extract height*
e	*extension (by default, e=30 mm)*
f	*extension (by default, f=30 mm)*
r	*radius(by default, r =120 mm)*
α	*angle (default angle =90°)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Eccentric Reducer

QPR2

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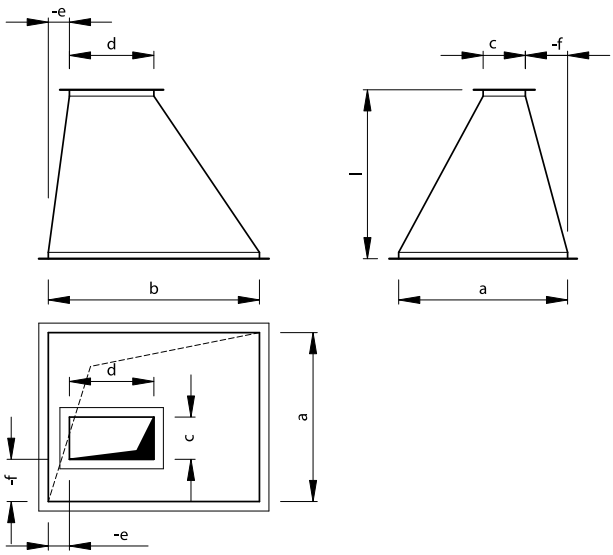
Description

The reducer is used to join two rectangular ducts, each with different rectangular dimensions.
On its ends it has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. It enables to design a ventilation system with all dimensions freely changeable and any offset in both directions.

Dimensions



Example identification

product code **QPR2 - N - OCY - 500 × 300 - 400 × 200 - 30 - 30 - 300 - 300 - 300**

type
N
S
OCY
KWS
ALU
a
b
c
d
e
f
h
m
l

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*inlet width*
b	*inlet height*
c	*outlet width*
d	*extract height*
e	*vertical shift*
f	*horizontal shift*
h	*extension (by default, h = 30 mm)*
m	*extension (by default, m = 30 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Eccentric Rectangular-to-Round Reducer

PR7 / PRL7

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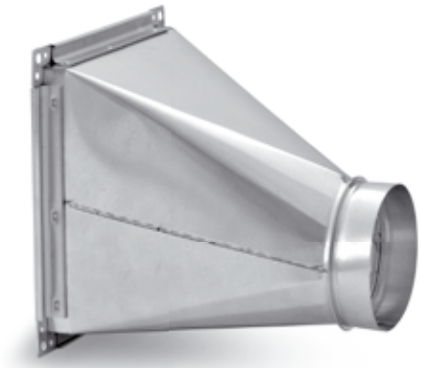
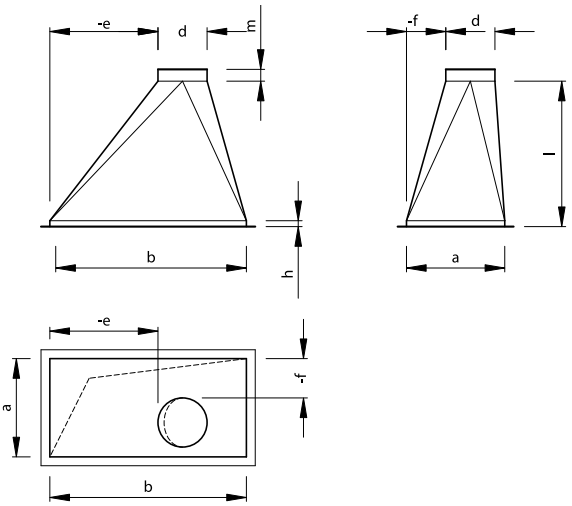


Dimensions



Description

The conversion is used to change the cross-section of the duct system from rectangular to round. The fitting enables to design a ventilation system with all dimensions freely changeable and any offset in both directions.
The round take-off has usually a male end. The PRL7 fitting comes with a gasketed male end.

Example identification

product code **PR7 - N - OCY - 500 × 300 - 250 - 50 - 30 - 30 - 50 - 800 - 300**

type
N
S
OCY
KWS
ALU
a
b
c
d
e
f
h
m
l

PR7	*without gasket*
PRL7	*with gasket*
N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
d	*diameter*
e	*vertical shift*
f	*horizontal shift*
h	*extension (by default, h = 30 mm)*
m	*extension (by default, m = 50 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Concentric Reducer

QPR6

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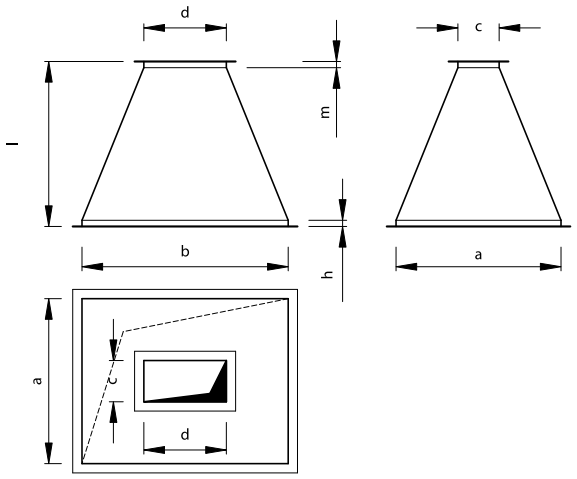
Dimensions



Description

The reducer is used for joining two rectangular ducts with different dimensions.
On its ends it has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. It enables to design a ventilation system by reducing its cross-section concentrically. The axes of both dimensions match each other.

Example identification

product code **QPR6 - N - OCY - 500 × 300 - 400 × 200 - 30 - 30 - 300**

type
N
S
OCY
KWS
ALU
a
b
c
d
h
m
l

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*inlet width*
b	*inlet height*
c	*inlet passage width*
d	*inlet height*
h	*extension (by default, h=30 mm)*
m	*extension (by default, m=30 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Concentric Rectangular-to-Round Reducer

PR1 / PRL1

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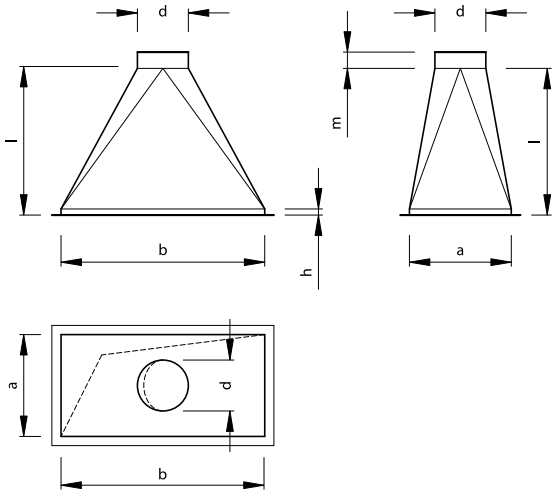
Dimensions



Description

The conversion is used to change the cross-section of the duct system from rectangular to round. The fitting enables to maintain the concentricity of the duct system, i.e. the axes of the rectangular and the round dimensions match each other. The rectangular take-off is typically provided with an end cover. The round take-off has usually a male end. The PRL1 fitting comes with a gasketed male end.

Example identification

product code **PR1 - N - OCY - 500 × 300 - 250 - 30 - 30 - 800**

type
N
S
OCY
KWS
ALU
a
b
d
h
m
l

PR1	*without gasket*
PRL1	*with gasket*
N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
d	*diameter*
h	*extension (by default, h = 30 mm)*
m	*extension (by default, m = 50 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Setoff

QPR3

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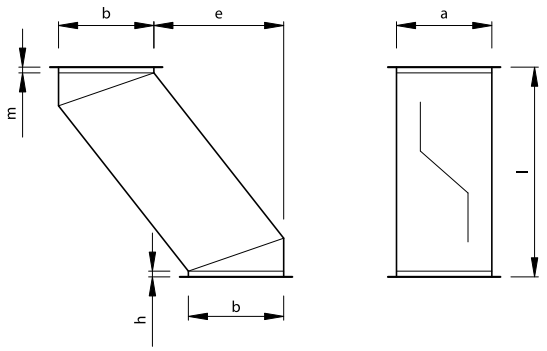
Dimensions

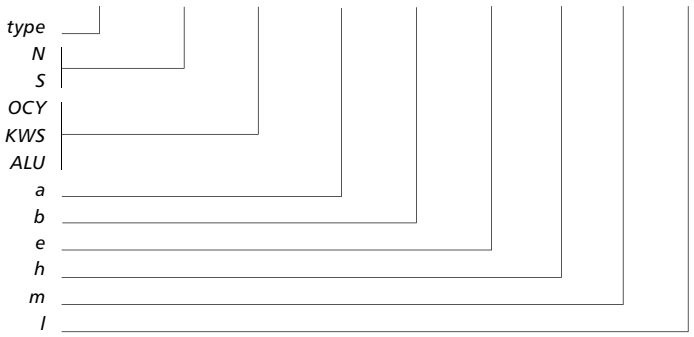


Description

The variable cross-section offset is used to bypass any obstructions in the ventilation system while changing the height of the duct, e.g. at duct crossings. On its ends it has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. To ensure proper air flow, it is recommended to select appropriate dimensions for length L and deviation e.

Example identification

product code **QPR3 - N - OCY - 500 × 300 - 100 - 30 - 30 - 800**



N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
e	*shift*
h	*extension (by default, h = 30 mm)*
m	*extension (by default, m = 30 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Variable Cross-Section Setoff

QPR4

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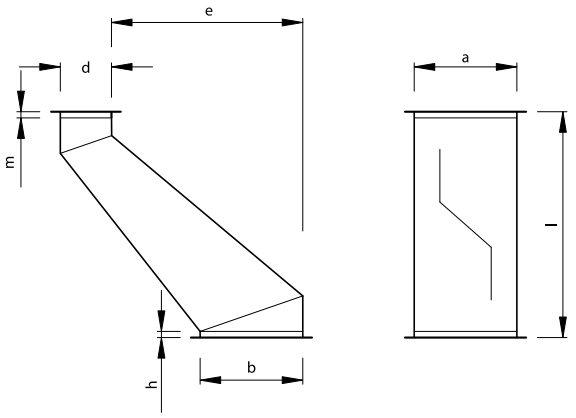
Dimensions



Description

The variable cross-section offset is used to bypass any obstructions in the ventilation system while changing the height of the duct, e.g. at duct crossings. On its ends it has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. To ensure proper air flow, it is recommended to select appropriate dimensions for length L and deviation e.

Example identification

product code **QPR4 - N - OCY - 500 × 300 - 200 - 100 - 30 - 30 - 800**

type
N
S
OCY
KWS
ALU
a
b
d
e
h
m
l

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*extract height*
d	*extract height*
e	*shift*
h	*extension (by default, h=30 mm)*
m	*extension (by default, m=30 mm)*
l	*length*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Symmetric T-piece

TR

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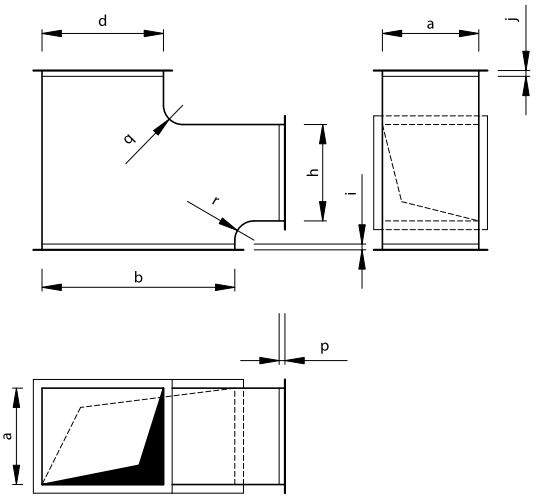
Dimensions



Description

On its ends the T-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. The fitting enables to design a ventilation system with a 90 degree tap. T-piece height a is fixed.

Example identification

product code **TR - N - OCY - 500 × 300 - 250 - 200 - 30 - 30 - 30 - 120 - 120**

type
N
S
OCY
KWS
ALU
a
b
d
h
i
j
p
q
r

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*inlet height*
d	*inlet height*
h	*outlet height*
i	*extension (by default, i=30 mm)*
j	*extension (by default, j=30 mm)*
p	*extension (by default, p=30 mm)*
q	*radius (by default, q=120)*
r	*radius(by default, r =120)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

T-piece with Rectangular Outlet

TR1

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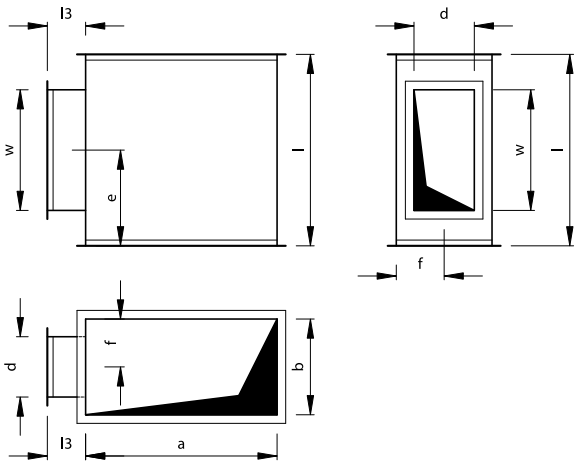
Dimensions



Description

On its ends the T-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. The T-piece enables to design a ventilation system with a 90 degree tap and an outlet reduction. The inlet and passage are fixed.

Example identification

product code **TR1 - N - OCY - 500 × 300 - 600 - 450 × 250 - 20 - 20 - 100**

type
N
S
OCY
KWS
ALU
a
b
l
w
d
e
f
l3

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*width*
l	*length*
w	*outlet length*
d	*outlet width*
e	*longitudinal outlet shift*
f	*transverse outlet shift*
l3	*outlet length (by default, l3 = 100 mm)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Tapered T-piece
TR7

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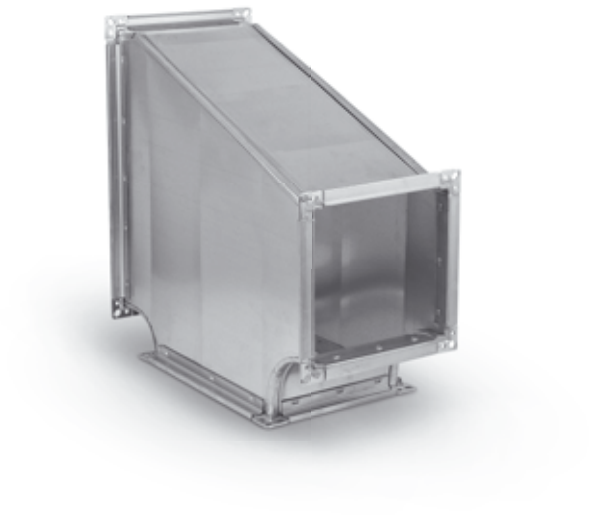
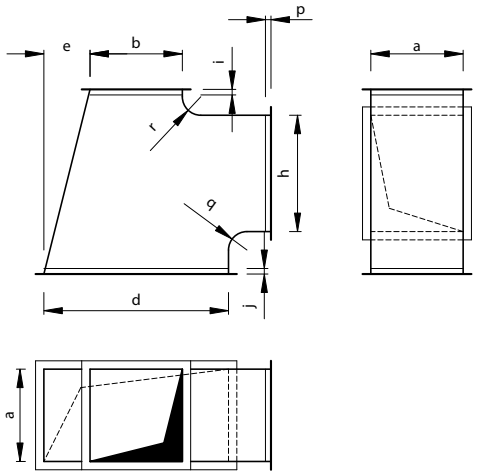


Dimensions



Description

On its ends the T-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. The T-piece enables to design a ventilation system with a 90 degree tap and an outlet reduction with outlet offset by any value m.

Example identification

product code **TR7 - N - OCY - 500 × 200 - 300 - 450 - 30 - 30 - 30 - 120 - 120 - 120**

type
N
S
OCY
KWS
ALU
a
b
d
h
i
j
p
q
r
e

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*inlet height*
d	*extract height*
e	*shift*
h	*outlet height*
i	*extension (by default, i=30 mm)*
j	*extension (by default, j=30 mm)*
p	*extension (by default, p=30 mm)*
q	*radius (by default, q=120)*
r	*radius(by default, r =120)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Concentric Taper T-piece
TR8

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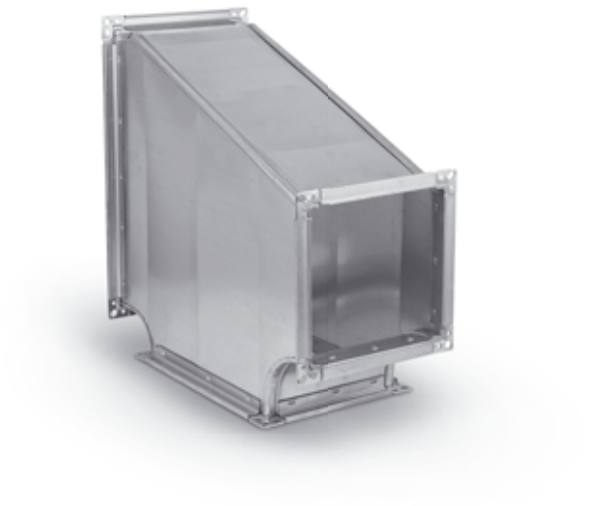
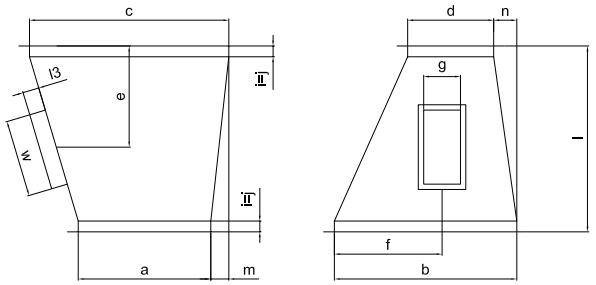


Dimensions



Description

On its ends the T-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. The T-piece enables to design a ventilation system with a 90 degree tap and an outlet reduction with outlet offset by any value m. In addition, the outlet can have a different height than the T-piece.

Example identification

product code **TR8 - N - OCY - 300 × 500 - 400 × 200 - 600 - 400 × 150 - 100 - 50 - 50 - 80 - 90 - 30 - 30**

Typ
N
S
OCY
KWS
ALU
a
b
c
d
l
w
g
l_3
m
n
e
f
i
j

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*inlet height*
c	*inlet width*
d	*extract height*
e	*shift*
l	*height*
w	*outlet length*
h	*outlet height*
g	*outlet width*
l_3	*outlet length (by default l3 = 100 mm)*
m	*vertical shift*
n	*horizontal shift*
i	*extension (by default, i = 30 mm)*
j	*extension (by default, j = 30 mm)*
e	*longitudinal outlet shift*
f	*transverse outlet shift*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

Symmetric Taper T-piece
TR9

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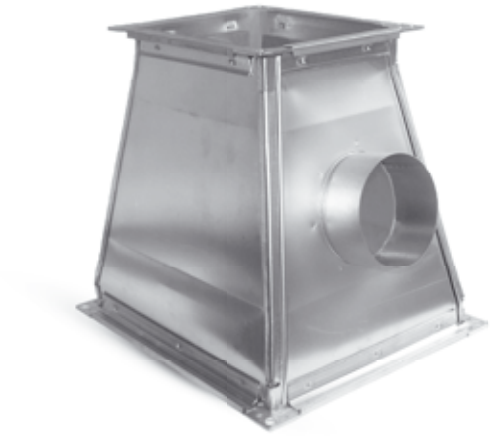
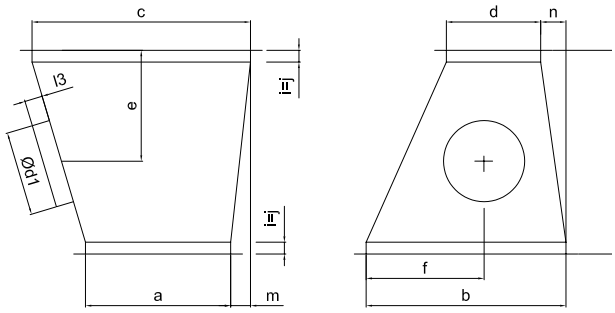


Dimensions



Description

On its ends the concentric taper T-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. The round outlet has typically a male end and is concentrically provided on one side. The T-piece enables to design a ventilation system with a round angled branch, but this angle depends on the inclination of the side wall from which the branch projects.

Example identification

product code	TR9	-	N	-	OCY	-	300 × 500	-	400 × 200	-	600	-	125	-	100	-	50	-	50	-	80	-	90	-	30	-	30
typ																											
N			■																								
S																											
OCY					■																						
KWS																											
ALU																											
a							■																				
b									■																		
c											■																
d													■														
l															■												
d_1																	■										
l_3																			■								
m																					■						
n																							■				
e																									■		
f																											
i																											
j																											

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*inlet height*
c	*inlet width*
e	*shift*
d_3	*outlet width*
l_3	*outlet length (by default l_3 = 100 mm)*
m	*vertical shift*
n	*horizontal shift*
i	*extension (by default, i = 30 mm)*
j	*extension (by default, j = 30 mm)*
e	*longitudinal outlet shift*
f	*transverse outlet shift*

X-piece with Round Taps

CZ2

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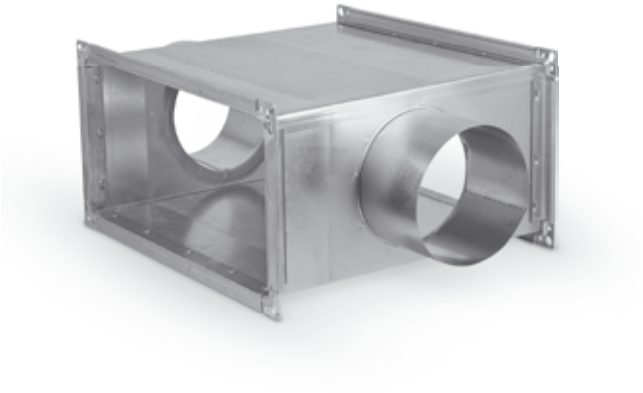
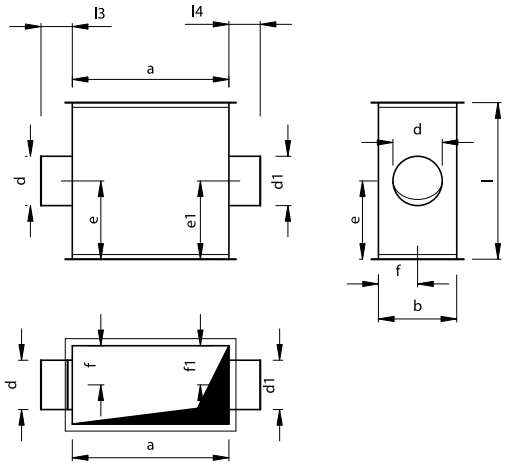


Dimensions



Description

On its ends the X-piece with round taps has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation.
The round taps are typically provided concentrically. The taps have typically male ends, and upon request they can be supplied as CZL2, where the male end is gasketed.

Example identification

product code	CZ2	-	N	-	OCY	-	500 × 300	-	400	-	160	-	50	-	80	-	100	-	150	-	100	-	80	-	100
type																									
N																									
S																									
OCY																									
KWS																									
ALU																									
a																									
b																									
l																									
d																									
e																									
f																									
l3																									
d1																									
e1																									
f1																									
l4																									

N	low pressure
S	medium pressure
OCY	galvanised material
KWS	acid-proof material
ALU	aluminium material
a	height
b	width
l	length
d	outlet diameter
e	longitudinal outlet shift
f	transverse outlet shift
l3	outlet height (by default, 13-100mm)
d1	outlet width
e1	longitudinal outlet shift
f1	transverse outlet shift
l4	outlet height

If all the dimensions of the second outlet are the same as those of the first one, they are set to default

T-piece with Round Tap

TR2

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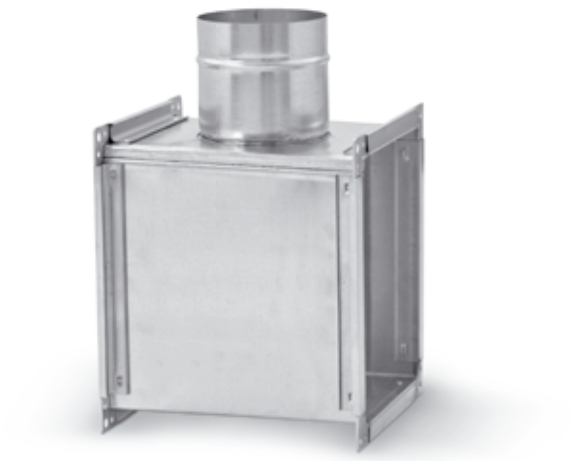
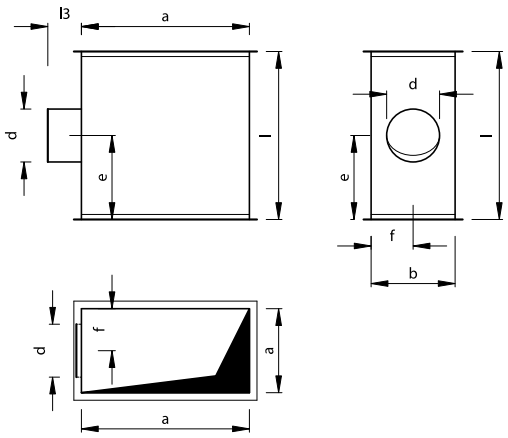


Dimensions



Description

On its ends the T-piece with round tap has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation.
The round tap is typically provided concentrically.
The tap has typically a male end, and upon request it can be supplied as TRL2, where the male end is gasketed.

Example identification

product code **TR2 - N - OCY - 500 × 300 - 250 - 160 - 30 - 60 - 100**

type
N
S
OCY
KWS
ALU
a
b
l
d
e
f
l3

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*width*
l	*length*
d	*diameter*
e	*longitudinal shift*
f	*transverse shift*
l3	*length (by default, 13-100mm)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

X-piece with Rectangular Tap

CZ1

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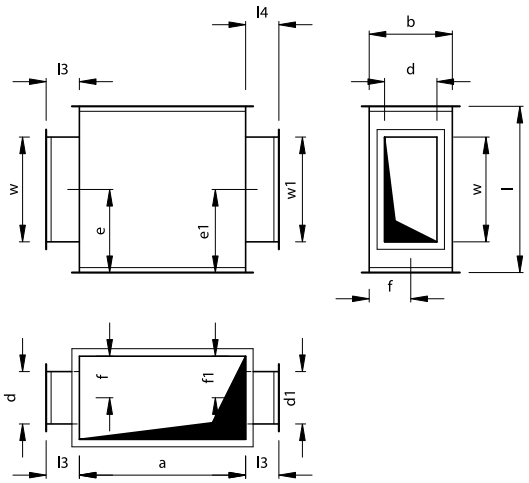
Dimensions



Description

On its ends the X-piece has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation.
The X-piece enables to design a ventilation system with 90 degree taps.

Example identification

product code **CZ1 - N - OCY - 500 × 300 - 400 - 200 × 150 - 200 - 150 - 100 - 100 × 80 - 60 - 60 - 100**

type
N
S
OCY
KWS
ALU
a
b
l
w
d
e
f
l3
w1
d1
e1
f1
l4

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*width*
l	*length*
w	*outlet length*
d	*outlet width*
e	*longitudinal outlet shift*
f	*transverse outlet shift*
l3	*outlet height (by default, 13-100mm)*
w1	*outlet length*
d1	*outlet width*
e1	*longitudinal outlet shift*
f1	*transverse outlet shift*
l4	*outlet height (by default, 14-100mm)*

If all the dimensions of the second outlet are the same as those of the first one, they are set to default

Concentric Y-Branch

TR3

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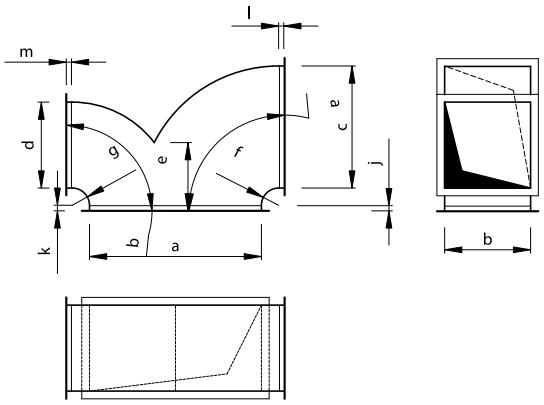
Dimensions



Description

On its ends the concentric Y-branch has mounting frames with sheet metal joining profiles and is stiffened with transverse sheet corrugation. It enables to design a ventilation system with two taps directed at any angle. Turning vanes can be used.

Example identification

product code **TR3 - N - OCY - 500 × 300 - 300 - 200 - 100 - 120 - 120 - 90 - 90 - 30 - 30 - 30 - 30**

- *type*
  - *N*
  - *S*
  - *OCY*
  - *KWS*
  - *ALU*
- *a*
- *b*
- *c*
- *d*
- *e*
- *f*
- *g*
- *β*
- *α*
- *j*
- *k*
- *l*
- *m*

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*width*
c	*outlet height 1*
d	*outlet height 2*
e	*base length*
f	*radius (by default, f=120)*
g	*radius (by default, g=120)*
β	*angle (default angle =90°)*
α	*angle (default angle =90°)*
j	*extension (by default, j=30 mm)*
k	*extension (by default, k=30 mm)*
l	*extension (by default, l=30 mm)*
m	*extension (by default, m=30 mm)*

Eccentric Variable Cross-Section Pant T-piece

TR5

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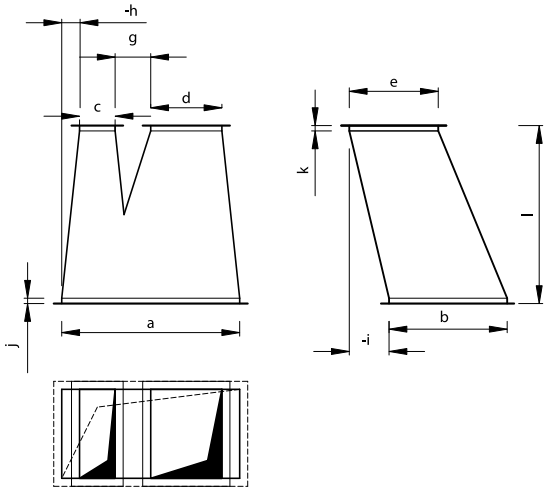
Dimensions



Description

On its ends the eccentric pant T-piece has mounting frames with sheet metal joining profiles, outer and inner corners, and is
stiffened with transverse sheet corrugation.
It enables to split the the air flow into two parallel branches.

Example identification

product code **TR5 - N - OCY - 500 × 300 - 100 - 200 - 200 - 600 - 60 - 40 - 60 - 20 - 20**

type
N
S
OCY
KWS
ALU
a
b
c
d
e
l
g
h
i
j
kv

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*inlet width*
c	*left passage height*
d	*right passage height*
e	*outlet width*
l	*length*
g	*distance between taps*
h	*horizontal shift*
i	*vertical shift*
j	*extension (by default, j=30 mm)*
k	*extension (by default, k=30 mm)*

Bend T-piece
TR4

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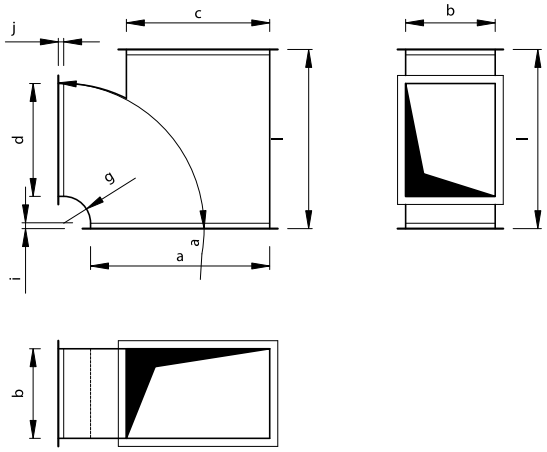
Dimensions



Description

On its ends the bend T-piece has mounting frames with sheet metal joining profiles, outer and inner corners, and is stiffened with transverse sheet corrugation.
The bend tap enables uniform air distribution with turning vanes to prevent air whirls in the duct.

Example identification

product code **TR4 - N - OCY - 500 × 300 - 300 - 200 - 600 - 20 - 90 - 30 - 30**

type
N
S
OCY
KWS
ALU
a
b
c
d
l
g
α
j
k

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*height*
b	*width*
c	*passage height*
d	*outlet height*
l	*length*
g	*radius (default r = 120 mm)*
α	*angle (default angle =90°)*
j	*extension (by default, j=30 mm)*
k	*extension (by default, k=30 mm)*

Round Duct Take-Off
TR6

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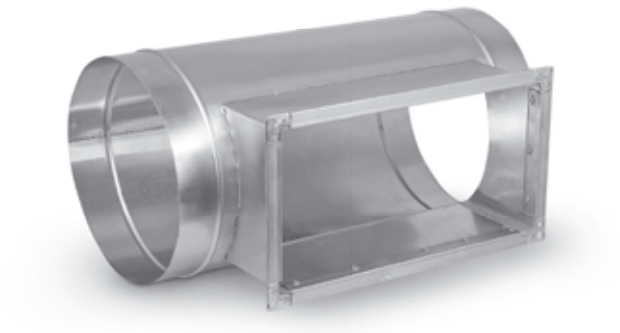
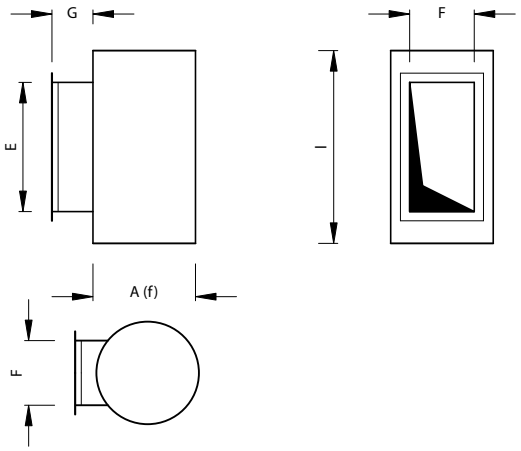


Dimensions



Description

The take-off is used to join rectangular with round ducts. On its one end it has a cover end with sheet metal joining profiles or a turned-up flange. Turn-ups for sheet screwing are usually provided on the side where the round duct is connected. The complete T-piece can also be ordered with a round duct.

Example identification

product code **TR6 - N - OCY - 630 - 500 - 250 × 400 - 60**

type
N
S
OCY
KWS
ALU
a
l
e
f
g

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*duct diameter*
l	*round duct length*
e	*outlet length*
f	*outlet width*
g	*outlet height*

The components are usually fabricated with standard dimensions, and there is no need to specify them.

End Cap
QES

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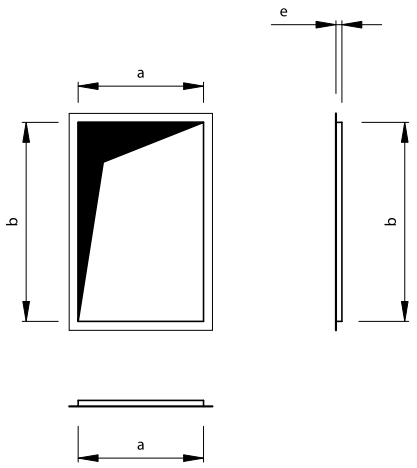
Dimensions



Description

The end cap is intended for terminating ducts. It is made of galvanised sheet metal. The flange is made of an end cover with sheet metal joining profiles.

Example identification

product code **QES - N - OCY - 500 × 300 - 30**

type
N
S
OCY
KWS
ALU
a
b
e

N	*low pressure*
S	*medium pressure*
OCY	*galvanised material*
KWS	*acid-proof material*
ALU	*aluminium material*
a	*width*
b	*height*
e	*extension (by default, e=30 mm)*

The components are usually fabricated with standard dimensions, and there is no need to specify them.