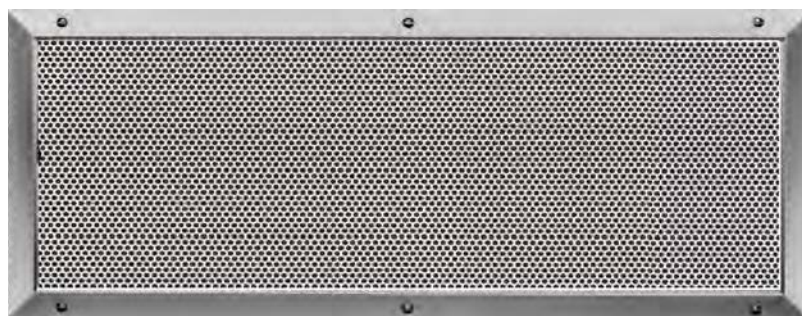


Ventilation grilles for installation into walls, ceilings or rectangular ducts

Type AP



Return air grilles, with aluminium border and fixed perforated steel core

Single return air grilles

- Nominal sizes AP, RC-AP: 150 × 100 – 1200 × 600 mm
APL: 595 × 595, 1195 × 1195 mm
- Volume flowrate maximum 1310 l/s or 4716 m³/h
- Grille face made of aluminium with powder-coat finish
- Front border, 30mm wide
- Visible screw fixing as standard

Optional equipment and accessories

- Grille face in RAL CLASSIC colours
- Attachments for opposed blade action volume control
- Screw fix border and border without punching available
- Optional subframe for secret fixing

Type		Page
AP	General information	AP - 2
	Basic information & nomenclature	AP - 4
	Quick sizing	AP - 5
	Order code	AP - 6
	Dimensions and weight	AP - 9
	Specification text	AP - 20
	Accessories - Subframe	AP - 21
	Attachments - Dampers	AP - 25

Description

Application

- Ventilation grille of Type AP as extract air variant for comfort zones and industrial zones
- Steel perforated core
- For variable and constant volume flows
- For installation in walls, ceilings and rectangular ducts

Variants

- AP: Single grille
- APL: Lay in ceiling tile replacement
- RC-AP: Single grille with removable core

Front Border

- AP: 30 mm wide
- APL: 17.5 mm wide
- RC-AP: 39 mm wide

Fixing

- 0: Countersunk holes
- X: Without holes (border drilling by customer)
- S11: Concealed fixings
(In combination with installation subframe)

Parts and characteristics

- Rectangular profile border sections
- Fixed perforated core
- Factory fitted perimeter seal

Nominal sizes

- AP
- Nominal length: 150mm up to 1200mm (25mm increments)
 - Nominal height: 100mm up to 600mm (25mm increments)
- Intermediate and larger sizes upon request
- APL
- Nominal sizes: 595 x 595 or 1195 x 1195
- Intermediate sizes upon request
- RC-AP
- Nominal length: 150mm up to 1200mm (25mm increments)
 - Nominal height: 100mm up to 600mm (25mm increments)
- Intermediate sizes upon request

Attachments

- AG: For volume flow control
- G4 Filter: FMR-G4-C15 22mm thick chemical fibre medium
Average arrestance according to EN779 - 90%

Accessories

- Installation subframe: For the fast and simple installation of ventilation grilles

Special characteristics

- Steel perforated core
- Rectangular front border
- Countersunk holes

Construction features

- 30 mm wide border
- Fixed facia perforated core

Materials and surfaces

- Border and core made of aluminium
- P3: Border and blades powder-coated, RAL9010:20%
- P6: Powder-coated RAL CLASSIC colour. Gloss level: 30%

Installation and commissioning

- Installation preferably in walls, ceilings and rectangular ducts
- Ideally the border should be fixed with screws

Standards and guidelines

- Sound power level of the air-regenerated noise measured according to EN ISO 5135

Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022
- It is recommended to inspect and if necessary clean or replace filter every three months

Technical data

Nominal sizes	150 × 100 to 1200 × 600 mm
Maximum volume flow rate, with L_{WA} max. 40 dB(A) without attachments	1310 l/s or 4716 m ³ /h

Volume flow rates for single grille for extract air.

Extract Air

The tables give effective inlet areas for Type AP. For Type RC-AP, all areas should be factored by 0.95

Effective inlet area AP/APL

H	L [mm]							
	150	200	300	400	500	600	700	800
mm	A_{eff} m ²							
100	0.004	0.005	0.007	0.010	0.013	0.019	0.022	0.024
150	0.006	0.008	0.013	0.018	0.023	0.028	0.033	0.038
200		0.011	0.019	0.026	0.033	0.040	0.046	0.053
250			0.024	0.032	0.041	0.050	0.058	0.066
300			0.031	0.041	0.053	0.063	0.074	0.084
350				0.050	0.063	0.076	0.088	0.101
400				0.058	0.072	0.086	0.101	0.115
450					0.086	0.103	0.120	0.137
500					0.093	0.113	0.131	0.150
550						0.125	0.146	0.167
600						0.130	0.155	0.178

H	L [mm]			
	900	1000	1100	1200
mm	A_{eff} m ²			
100	0.024	0.028	0.031	0.034
150	0.043	0.047	0.052	0.057
200	0.059	0.066	0.073	0.082
250	0.074	0.083	0.091	0.102
300	0.097	0.108	0.119	0.130
350	0.113	0.126	0.139	0.155
400	0.130	0.148	0.163	0.178
450	0.154	0.176	0.193	0.211
500	0.169	0.188	0.206	0.225
550	0.188	0.209	0.230	0.257
600	0.200	0.222	0.244	0.274

Principal dimensions

L [mm]

Nominal length of the ventilation grille

m [kg]

Weight

H [mm]

Nominal height of the ventilation grille

Nomenclature

L_{WA} [dB(A)]

Sound power level of the air-regenerated noise

Δp_t [Pa]

Total differential pressure

\dot{V} [m³/h] and [l/s]

Volume flow rate

Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for ventilation grilles. The volume flow rates apply to a nominal grille length [L] of 1000mm, maximum sound power level of the air-regenerated noise of 40 dB(A) with an open damper unit (unrestricted airflow) and maximum 20 Pa pressure drop.

Technical data

The tables gives extract air volume flow rates, based on l/s/m for a maximum 5Pa, 10Pa or 15Pa limit.

Maximum sound power level of the air-regenerated noise of 40 dB(A) with an open damper unit (unrestricted airflow)

Extract Air AP/APL

Extract Air Volume			
Δp_t (Pa)	5	10	15
H (mm)	V (l/s/m)		
100	91	127	154
150	170	236	286
200	249	345	418
250	315	436	528
300	403	559	676
350	492	681	818
400	564	781	923
450	674	933	1064
500	732	1014	1123
550	820	1136	1247
600	853	1181	1310

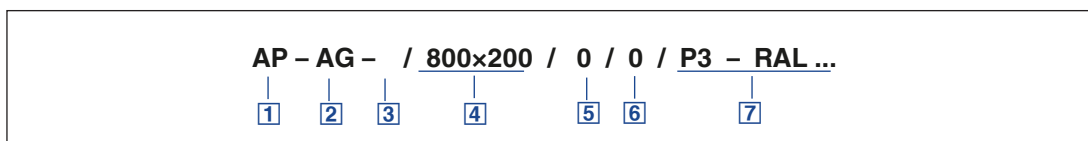
Extract Air RC-AP

For pressure drop information with G4 filter please refer to TROX

Extract Air Volume			
Δp_t (Pa)	5	10	15
H (mm)	V (l/s/m)		
100	91	127	154
150	167	231	280
200	236	327	396
250	302	418	506
300	380	527	638
350	462	640	775
400	540	747	905
450	641	888	1014
500	693	959	1073
550	787	1090	1193
600	814	1127	1251

Single grille

AP as a single grille



1 Type

- AP** Single grille (30mm border)
- APL** Single grille (17.5mm border)
- RC-AP** Single grille (39mm border)

2 Attachments

- A** Grille face only
- AG** Damper unit with opposed action blades*³⁾

3 Filter¹⁾

- 0** Grille face only
- G4** Grade G4 filter

4 Nominal size [mm]

- | | |
|--------------|-------------------------|
| | L × H |
| AP | 150 x 100 to 1200 x 600 |
| APL | 595 x 595, 1195 x 1195 |
| RC-AP | 150 x 100 to 1200 x 600 |

* Damper assembly to be specified within plenum box (when supplied)

1) RC-AP only

2) AP only

3) Not with G4 filter

5 Installation Subframe

- 0** Without subframe
- B30** With 75mm subframe bracket²⁾

6 Fixing

- 0** Countersunk holes (30mm border)²⁾
- X** Without holes
- S11** Secret fixing
(In combination with installation subframe)²⁾

7 Exposed surface

- P3** RAL 9010:20%
- P6** Powder-coated RAL CLASSIC colour.
Gloss level: 30%

Order example

AP-AG/800×200/0/0/P3/RAL9010/20% Gloss

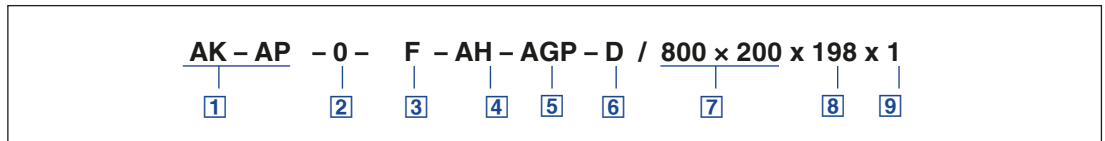
Attachments	Damper unit, opposed action blades
Nominal size	800 × 200 mm
Subframe	Without Frame
Fixing	Screwfix border
Exposed surface	Powdercoat, RAL9010:20% (white)

RC-AP-A-F711/800×200/0/X/P3/RAL9010/20% Gloss

Attachments	Grille face only
Filter	Grade G4 filter
Nominal size	800 × 200 mm
Subframe	Without Frame
Fixing	Without holes
Exposed surface	Powdercoat, RAL9010:20% (white)

Plenum box

AK-AP, plenum box



1 Type

- AK-AP** Plenum box to suit AP grille
 - AK-APL** Plenum box to suit APL grille
 - AK-RC*** Plenum box to suit RC-AP grille
- *AE and AP variants

2 Grille fixing

- 0** Countersunk holes (30mm border)¹⁾
- X** Without holes
- S11** Secret fixing¹⁾

3 Plenum style

- F** Finite
- M** Linear¹⁾

4 Connection type

- AH** Horizontal (extract air)
- AV** Vertical (extract air)

5 Damper type

- 0** Without damper
- M** Perforated spigot damper
- MC** Cord operated spigot damper
- AGP** Opposed blade VCD (fitted to plenum)²⁾

¹⁾ AP only

²⁾ Damper assembly to be specified within plenum box (when supplied)

6 Internal lining

- 0** No lining
- D** 12mm foam lining

7 Plenum nominal size [mm]

L x H

8 Spigot size [mm]

- Ø98, Ø123, Ø138, Ø148, Ø158, Ø178, Ø198, Ø222, Ø248, Ø278, Ø298, Ø313, Ø348, Ø353, Ø398, Ø448*, Ø498*, Ø558*
- *Not in combination with ...-M, ...-MC*

9 Spigot quantity

Qty 1...4

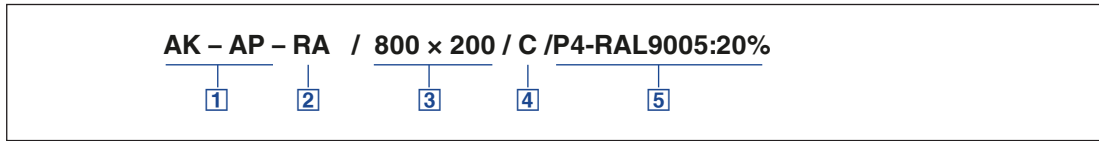
Order example

AK-AP-0-F-AH-AGP-D/800x200x198x1

Plenum Type	AP
Grille fixing	Counterpunch border
Plenum style	Finite
Connection type	Horizontal (extract air)
Damper type	Opposed blade VCD (fitted to plenum)
Plenum lining	12mm foam lining
Plenum nominal size	800mm x 200mm
Spigot size	Ø198mm
Spigot quantity	1

Return air baffle

AK-AP, return air baffle

**1** Type

AK-AP Plenum box to suit AP grille
AK-APL Plenum box to suit APL grille
AK-RC* Plenum box to suit RC-AP grille
 *AE and AP variants

4 Paint option

C Painted externally and internally

5 Finish

P4 RAL9005:20%

2 Grille fixing

RA To suit RA

3 Plenum nominal size [mm]

L x H

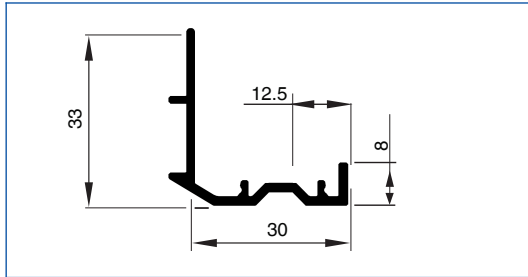
Order example

AK-AP-RA/800x200/C/P4-RAL9005:20%

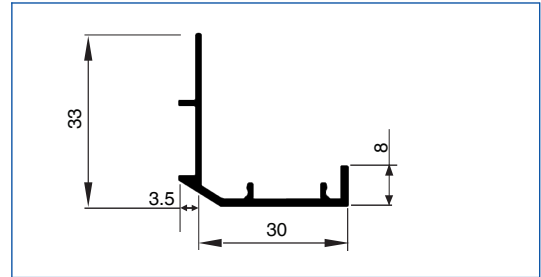
Plenum Type	AP
Grille fixing	RA
Plenum nominal size	800x200
Paint option	Painted externally and internally
Finish	RAL9005:20%

Front border

Front border AP-...-0



Front border AP-...-X



Single grille

AP, 30 mm wide front border

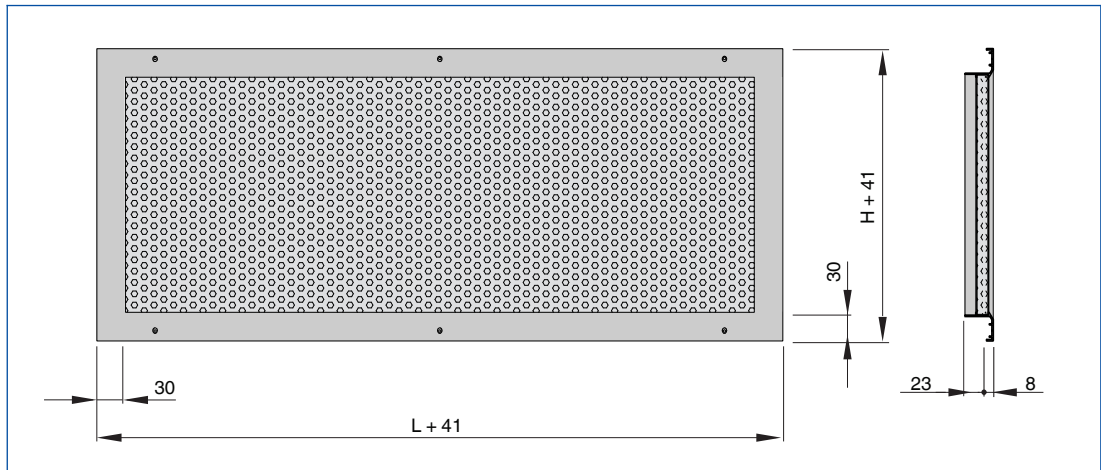
L: Nominal length
H: Nominal height

Cut out size;
Grille fixing ...-0, ...-X

H / L

Grille fixing ...-S11

H + 6 / L + 6



Weights

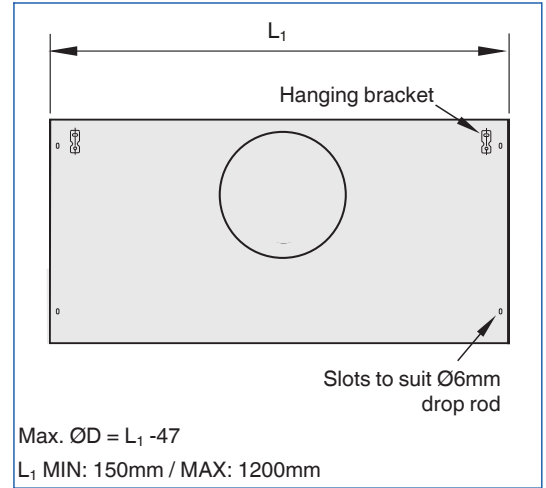
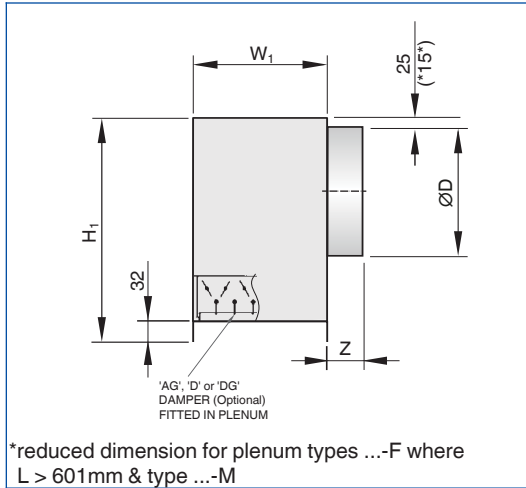
H	Single Grille
	m
mm	kg/m
100	1.1
150	1.3
200	1.6
250	1.8
300	2.1
350	2.3

H	Single Grille
	m
mm	kg/m
400	2.5
450	2.8
500	3.0
550	3.3
600	3.5

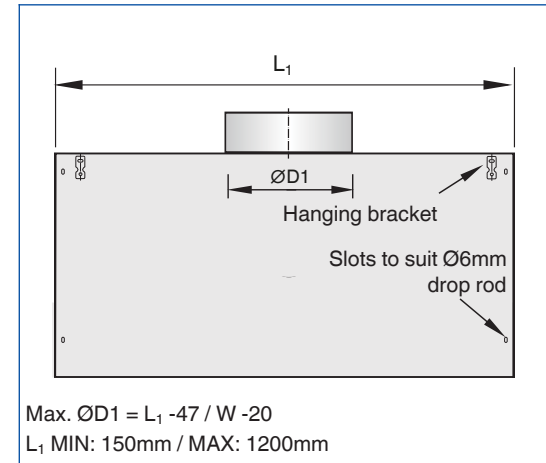
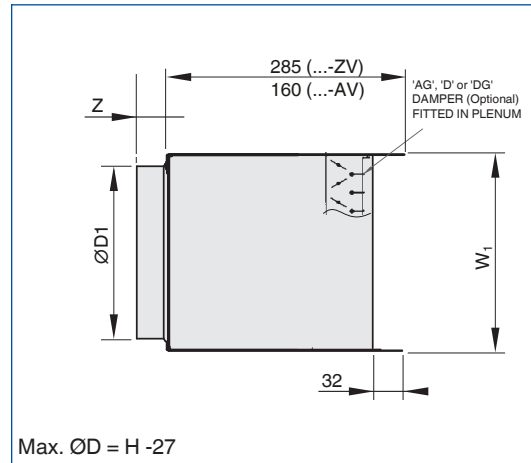
Weights apply to sections without attachments

Plenum Box AK-AP Connection type ...-AH

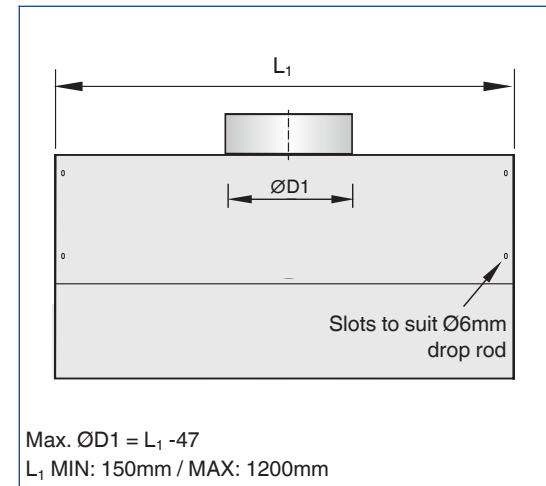
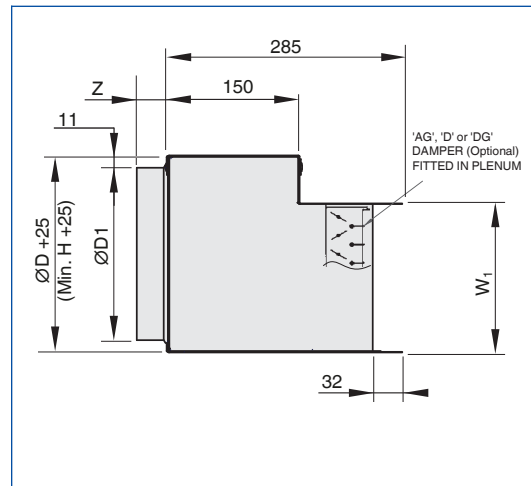
NOTE;
Hanging brackets only supplied where $L_1 > 300\text{mm}$



Connection type...-AV [ØD < H - 27]



Connection type...-AV [ØD > H - 27]



Dimensions

H_1 dimension excludes grille border

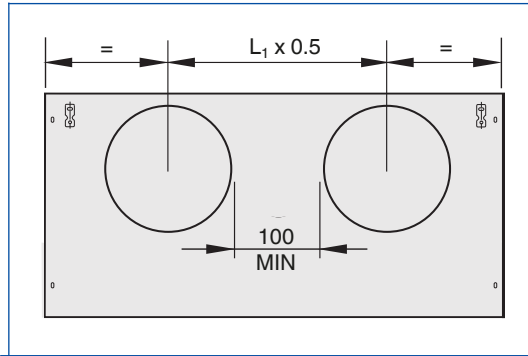
Overall plenum & grille assembled height;
 H_1 + grille border depth

Grille Fixing	Dimensions				
	Plenum Type	L_1	H_1	W_1	Z
...-O	F	L -5	ØD +150	H -5	40 (*75)
...-X	F	L -12	ØD +150	H -12	40 (*75)
...-S11	F	L +2	ØD +165	H +2	40 (*75)

Spigot Z
...-0 (without spigot damper): 40mm
...-M / ...-MC : 75mm

Plenum type F: Finite (nominal plenum length = nominal grille length)

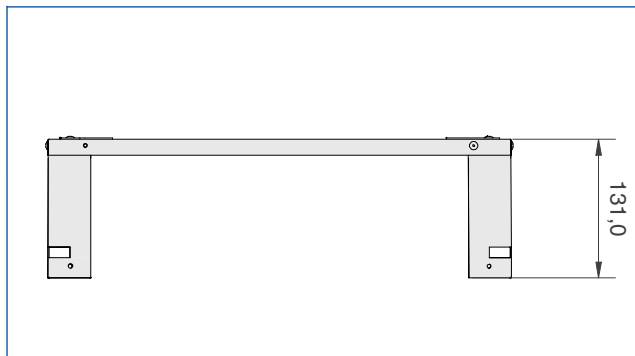
Multi Spigot



$$\text{MAX. } \varnothing D = (L_1 / \text{Spigot qty}) - 99$$

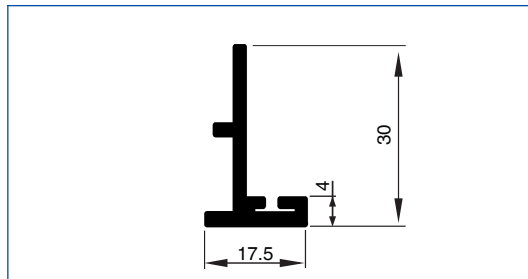
Spigot location equally spaced for side & top entry plenum boxes.

RA



Front border

Front border APL-...-0

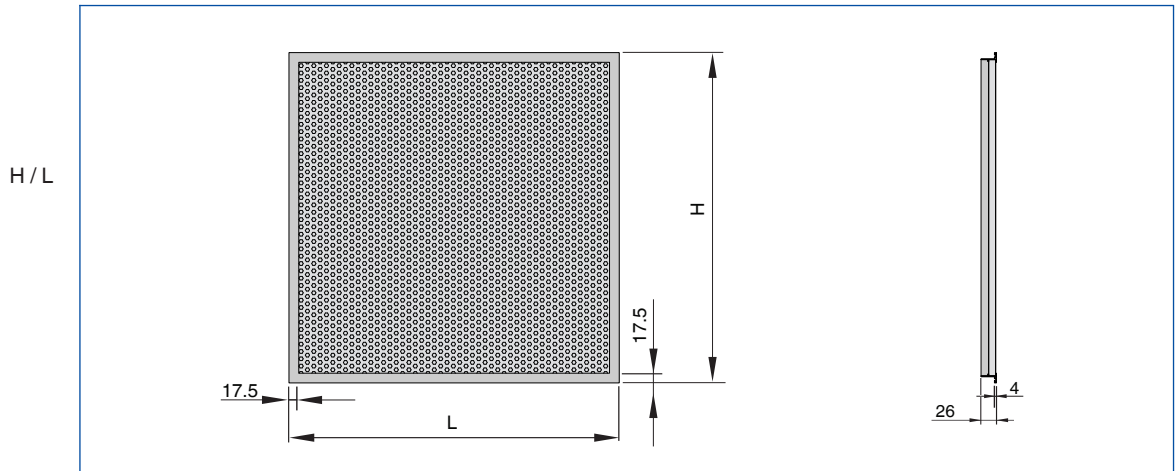


Single grille

APL, 17.5 mm wide front border

L: Nominal length
H: Nominal height

Cut out size;
Grille fixing ...-X



Weights

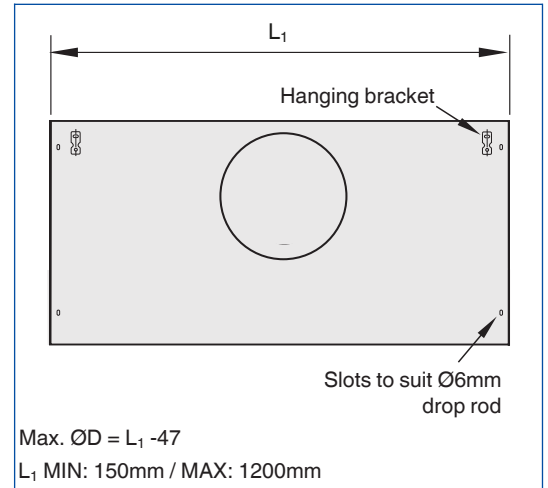
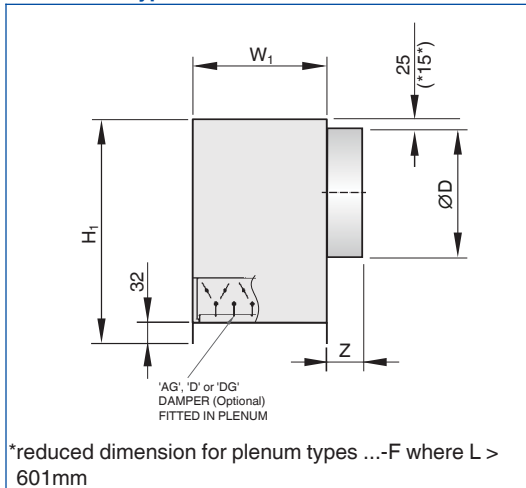
H	Single Grille
	m
mm	kg/m
100	0.9
150	1.2
200	1.4
250	1.6
300	1.9
350	2.1

H	Single Grille
	m
mm	kg/m
400	2.3
450	2.6
500	2.8
550	3.0
600	3.3

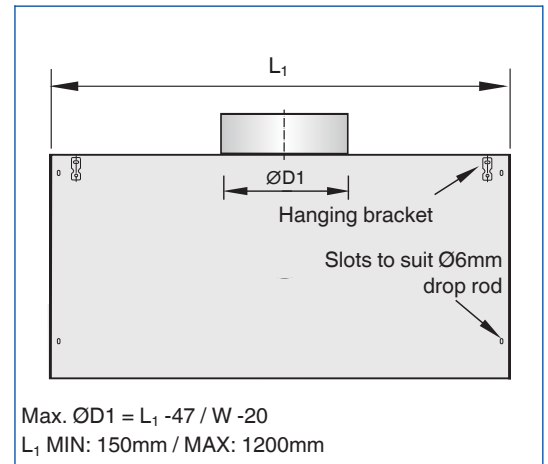
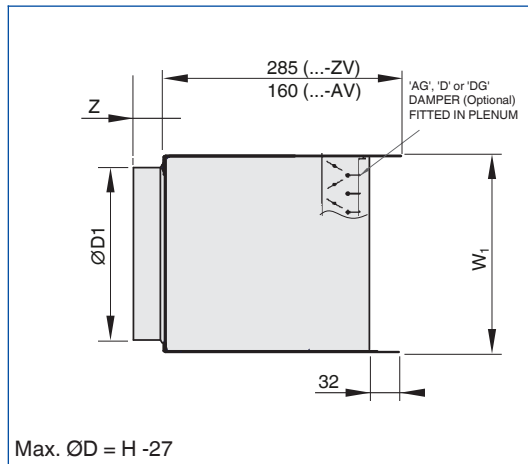
Weights apply to sections without attachments

Plenum Box AK-APL Connection type ...-AH

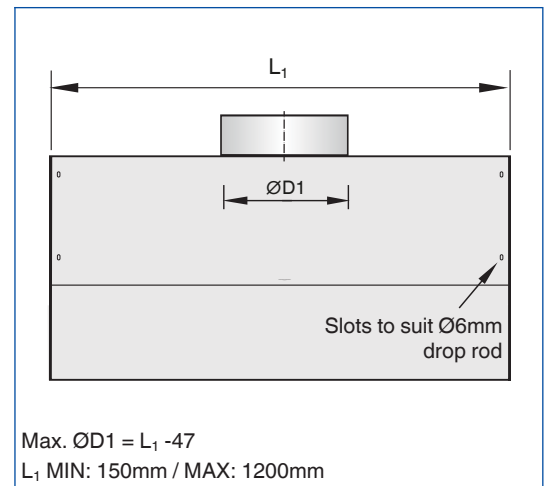
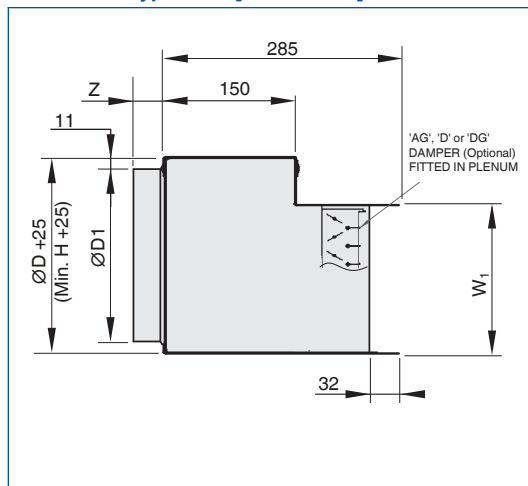
NOTE;
Hanging brackets only supplied where $L_1 > 300\text{mm}$



Connection type...-AV [$\text{ØD} < H - 27$]



Connection type...-AV [$\text{ØD} > H - 27$]



Dimensions

H_1 dimension excludes grille border

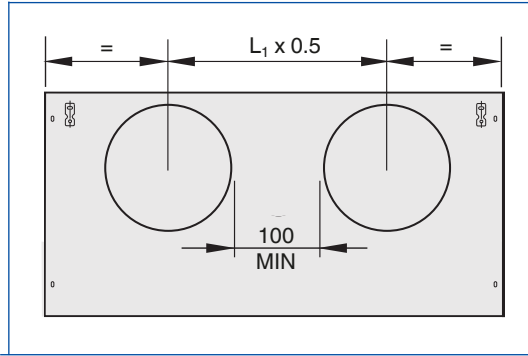
Overall plenum & grille assembled height;
 H_1 + grille border depth

Grille Fixing	Plenum Type	Dimensions			
		L_1	H_1	W_1	Z
...-X	F	$L - 18$	$\text{ØD} + 150$	$H - 18$	$40 (*75)$

Plenum type F: Finite (nominal plenum length = nominal grille length)

Spigot Z
...-0 (without spigot damper): 40mm
...-M / ...-MC : 75mm

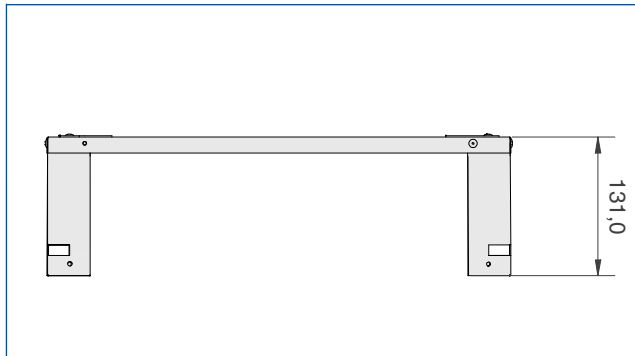
Multi Spigot



MAX. ØD = (L1 / Spigot qty) - 99

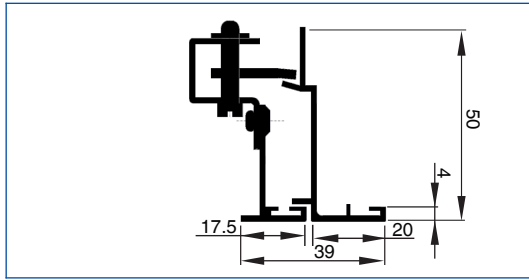
Spigot location equally spaced for side & top entry plenum boxes.

RA



Front border

Front border RC-AP-...-0



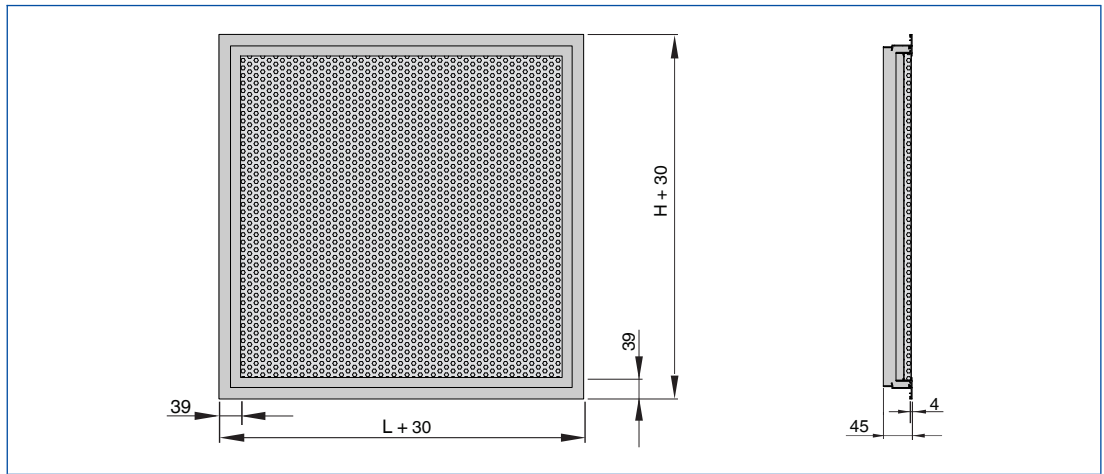
Single grille

RC-AP, 39 mm wide front border

L: Nominal length
H: Nominal height

Cut out size;
Grille fixing ...-X

H / L



Weights

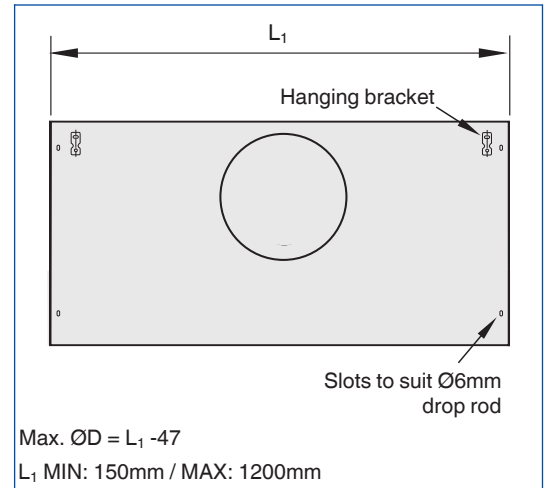
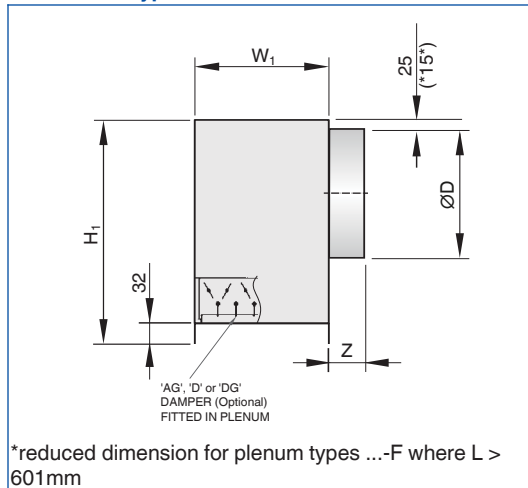
H	Single Grille
	m
mm	kg/m
100	1.7
150	2.0
200	2.3
250	2.5
300	2.8
350	3.1

H	Single Grille
	m
mm	kg/m
400	3.3
450	3.6
500	3.9
550	4.1
600	4.4

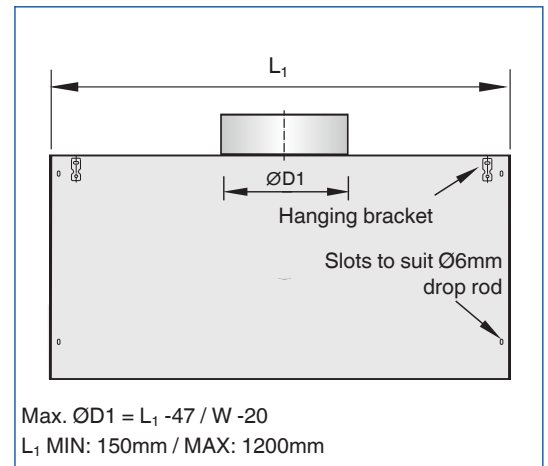
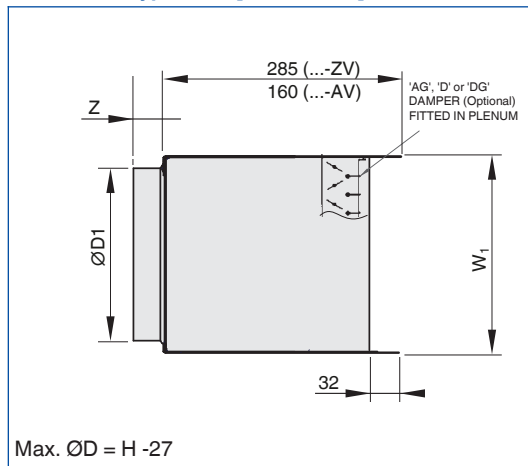
Weights apply to sections without attachments

Plenum Box AK-RC Connection type ...-AH

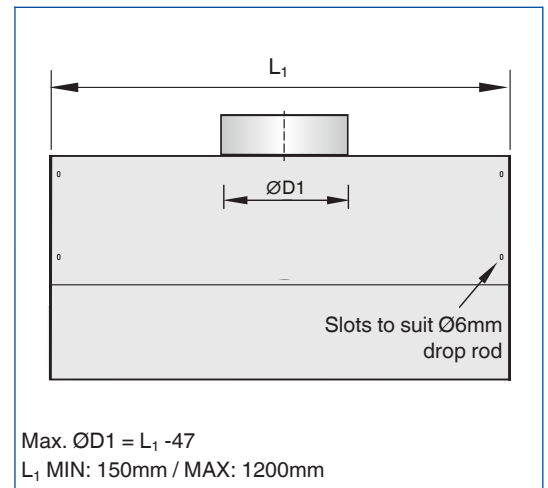
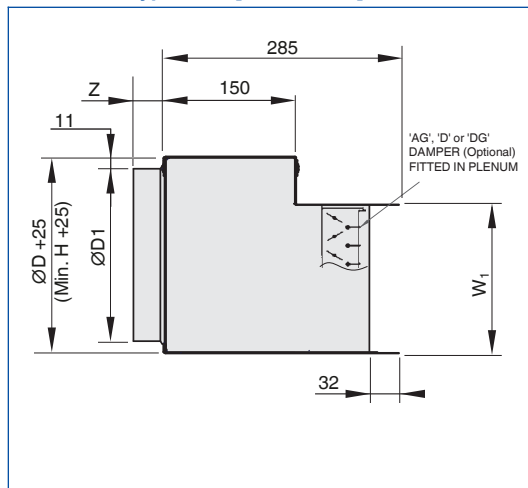
NOTE;
Hanging brackets only supplied where $L_1 > 300\text{mm}$



Connection type...-AV [ØD < H - 27]



Connection type...-AV [ØD > H - 27]



Dimensions

H_1 dimension excludes grille border

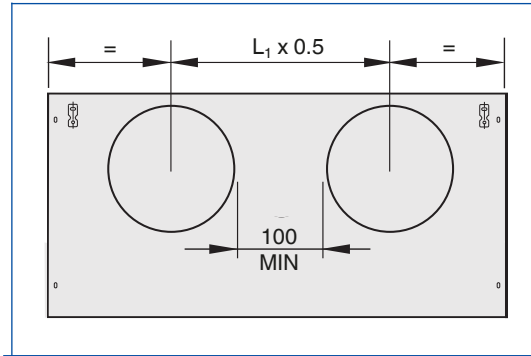
Overall plenum & grille assembled height;
 H_1 + grille border depth

Grille Fixing	Plenum Type	Dimensions			
		L_1	H_1	W_1	Z
...-X	F	L - 5	$\text{ØD} + 165$	H - 5	40 (*75)

Plenum type F: Finite (nominal plenum length = nominal grille length)

Spigot Z
...-0 (without spigot damper): 40mm
...-M / ...-MC : 75mm

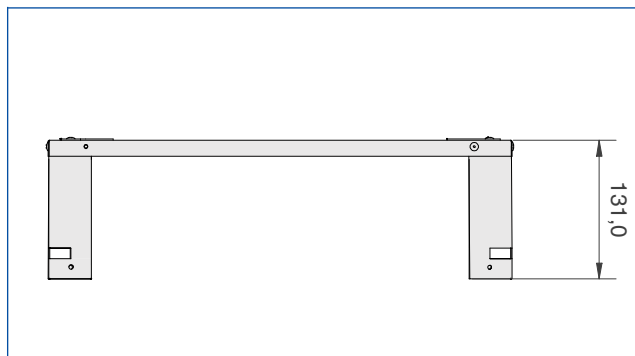
Multi Spigot



MAX. ØD = $(L_1 / \text{Spigot qty}) - 99$

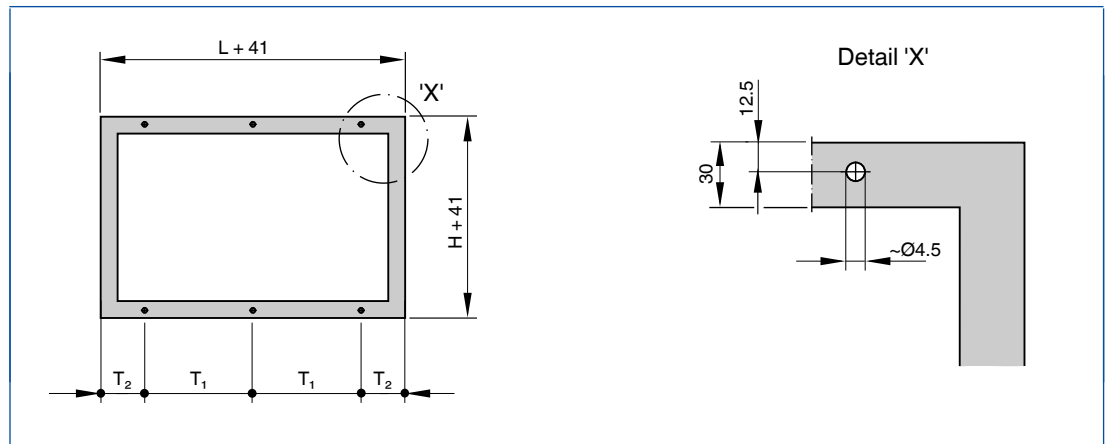
Spigot location equally spaced for side & top entry plenum boxes.

RA



Border punch detail

AP, 30 mm wide front border

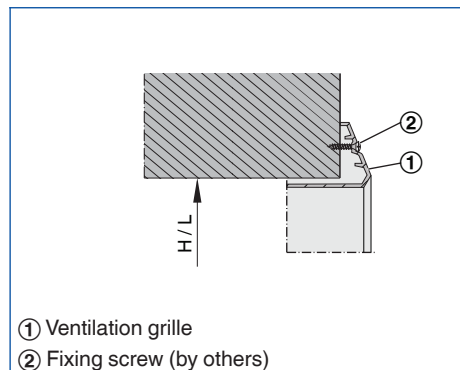


AP, standard sizes, length, no. of border fixing holes

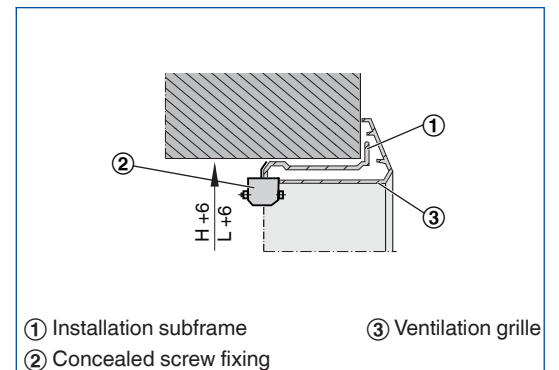
Length L mm	No. of holes n	mm	
		T ₁	T ₂
150	1	-	95.5
200	1	-	120.5
250	1	-	145.5
300	2	205.0	68
350	2	255.0	68
400	2	305.0	68
450	2	355.0	68
500	2	405.0	68
550	3	227.5	68
600	3	252.5	68
650	3	277.5	68
700	3	302.5	68
750	3	327.5	68
800	3	352.5	68
850	4	251.7	68
900	4	268.3	68
950	4	285.0	68
1000	4	301.7	68
1050	4	318.3	68
1100	4	335.0	68
1150	4	351.7	68
1200	4	368.3	68

Fixing of ventilation grilles

Ventilation grille with screw fixing

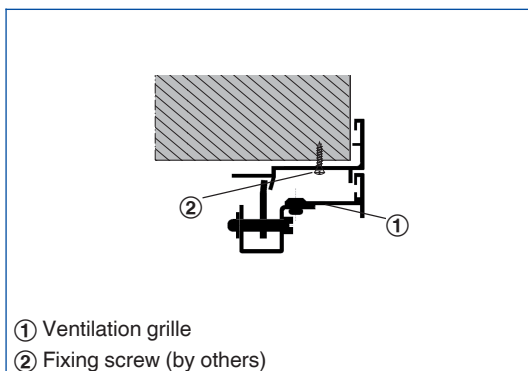


Ventilation grille with concealed screw fixing



Fixing
of ventilation grilles

RC-AP: Screw fixing



Standard text

This specification text describes the general properties of the product.

Ventilation grilles, rectangular, made of aluminium, for supply and extract air. Rectangular profile border. Preferably for wall and ceiling installation but also suitable for rectangular ducts.

Ready-to-install component which consists of a border and fixed horizontal blades. Countersunk holes for fixing onto an installation surface. Sound power level of the air-regenerated noise measured according to EN ISO 5135.

Technical data

- Nominal sizes: AP 150 × 100 to 1200 × 600 mm
RC-AP 150 × 100 to 1200 × 600 mm
APL 595 × 595, 1195 × 1195 mm
- Maximum volume flow rate (extract air):
1310 l/s or 4716 m³/h
at L_{WA} max. 40 dB(A) without attachments

Special characteristics

- Perforated steel core
- Front border
- Countersunk holes

Sizing data

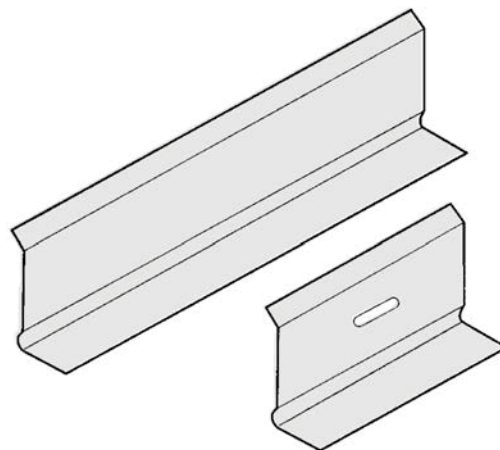
- \dot{V} _____ [l/s]
- Δp_t _____ [Pa]
- L_{WA} Air-regenerated noise _____ [dB(A)]

Materials and surfaces

- Border and blades made of aluminium
- P3 : Border and blades powder-coat RAL9010:20%
- P6: Powder-coated RAL CLASSIC colour.
Gloss level: 30%

Accessories

Installation Subframe



Installation subframes, made of galvanised sheet steel, for the fast and simple installation of ventilation grilles

Installation subframe for the simple and precise installation of ventilation grilles

- Angle sections made of galvanised steel
- Individual frame sections or linear sections for site cutting

Type		Page
-B20, B30, L20, L30	General information	AP – 22
	Installation details	AP – 24

Description

Application

- For the installation of ventilation grilles in walls and sills
- Simplified installation
- The installation subframe allows for the fast, simple and precise installation of ventilation grilles
- Required for the installation of single grilles and horizontal run sections with concealed fixing

Materials and surfaces

- Installation subframes, made of formed galvanised sheet steel

Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

Parts and characteristics

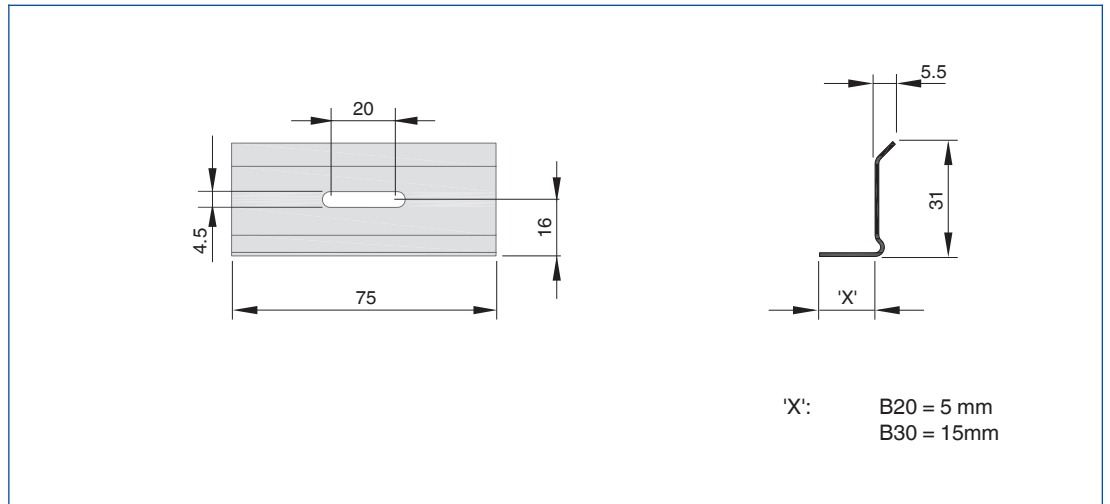
- Installation subframe consisting of angle sections

Any accessories are defined with the order code of the ventilation grille.

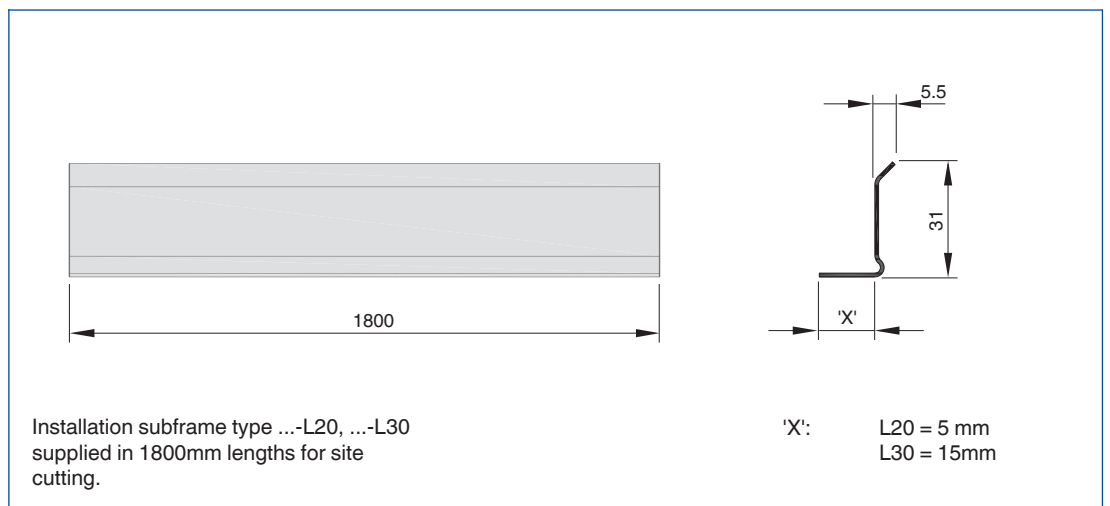
Installation subframe for ventilation grilles

Type of ventilation grille	Grille Type	
	Finite	Linear
	[L < 1800]	[L > 1800]
Installation into walls, sills or rectangular ducts		
AT	B30	-
VAT	B30	-
AH	B30	L30
AHR	B20	L20
WAP	B30	L30
WAPR	B20	L20
AE	B30	-

Installation subframe ...-B20, ...-B30 for ventilation grilles



Installation subframe ...L20, ...L30 for ventilation grilles



Description

Installation information

- Installation and making connections to be performed by others

Single grille

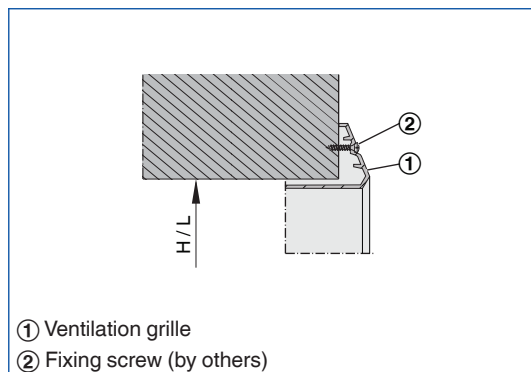
- The installation subframe consists of individual sections (...-B20, ...-B30)
- Fixing holes are provided for fixing the frame with screws to different wall structures

Horizontal run sections

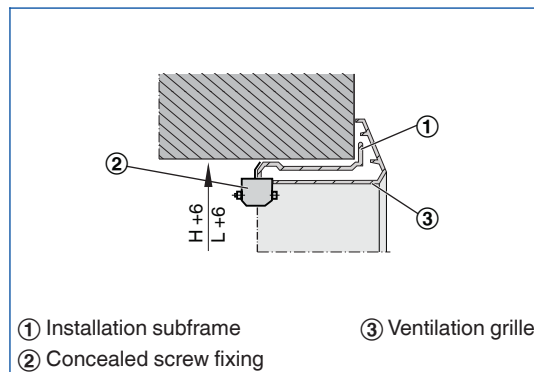
- The installation subframe consists of linear (1800mm) sections (...-L20, ...-L30) for site cutting as necessary
- Subframe can be installed as linear sections or cut down to suit site installation requirements.

Fixing of ventilation grilles

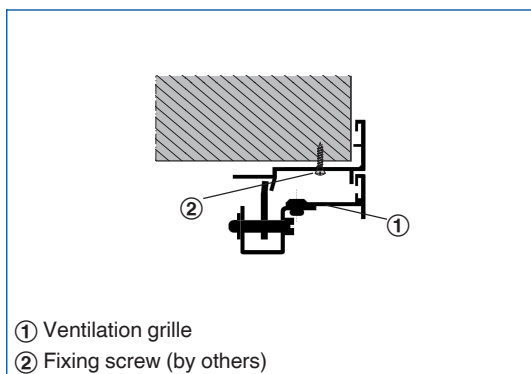
Ventilation grille with screw fixing



Ventilation grille with concealed screw fixing



RC-AE screw fixing

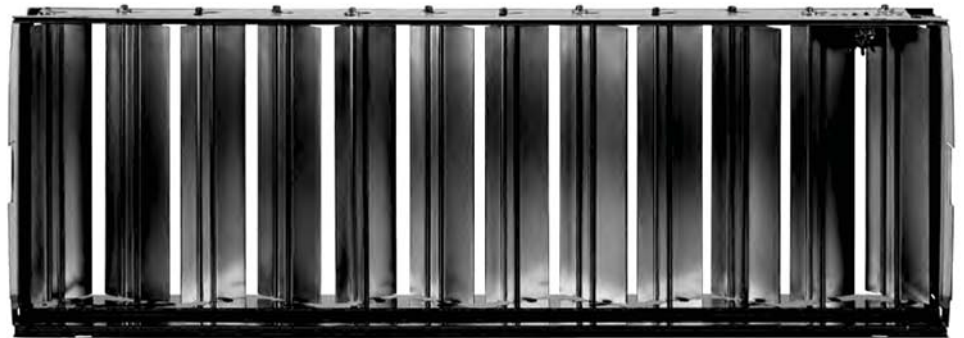


Attachments

Types -AG



AG



Attachments for ventilation grilles, made of sheet steel, for volume flow rate balancing and air direction control

Attachments with manually adjustable blades

- Volume flow rate balancing
- Air direction control

Type		Page
-AG	General information	AP – 26
	Special information – -AG	AP – 27

Description

Application

- Attachments for ventilation grilles offer additional functions
- For volume flow rate balancing and/or for air direction control
- Damper units simplify the volume flow rate balancing required for commissioning, for supply air and extract air
- Ventilation grille need not be removed for adjustment

Variants

- AG: Damper unit with opposed action blades

Maintenance

- Maintenance-free as construction and materials are not subject to wear
- Inspection and cleaning to VDI 6022

Any accessories are defined with the order code of the ventilation grille.

Attachments for ventilation grilles

Type of ventilation grille	Attachment		
	-AG	-D	-DG
	Damper unit	Air direction control	Damper unit Air direction control
Installation into walls, ceilings or rectangular ducts			
AT	●	●	●
VAT	●	●	●
AH	●	●	●
AHR	●	●	●
WAP	●	●	●
WAPR	●	●	●
AF	●	●	●
AFW	●	●	●
AFH	●	●	●
AP	●		

Description



AG



Order code detail

Application

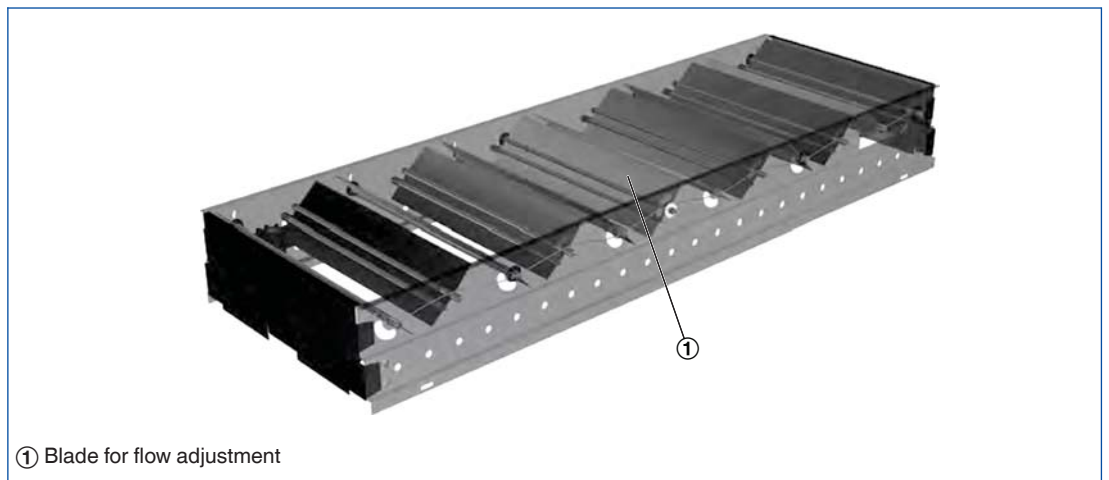
- For volume flow rate balancing
- Damper units simplify the volume flow rate balancing required for commissioning, for supply air and extract air
- Ventilation grille need not be removed for adjustment

Parts and characteristics

- Opposed action blades
- Can be adjusted and set with screws

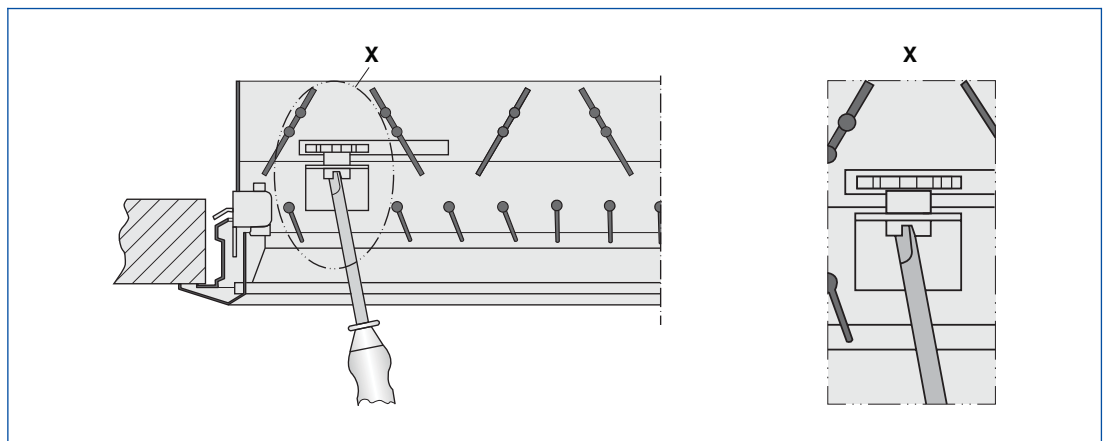
Function

Schematic illustration of -AG



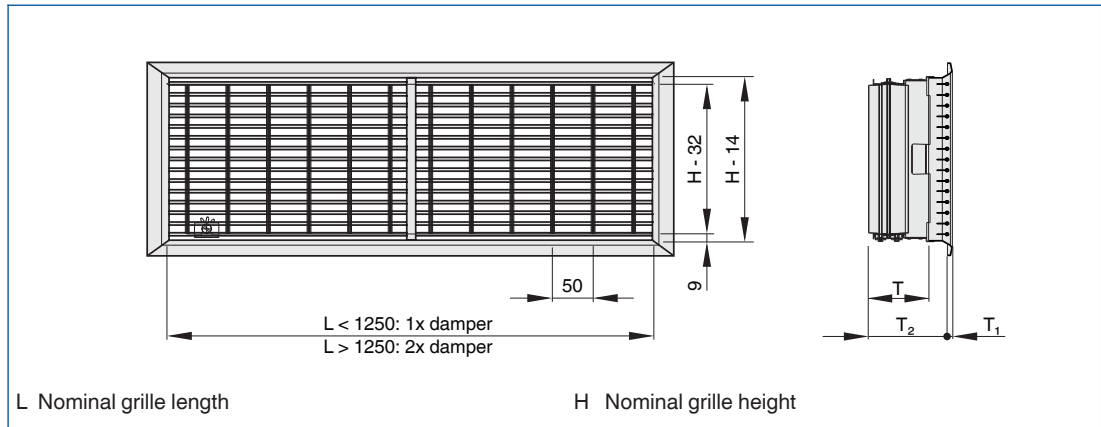
Commissioning

Volume flow rate balancing -*G



Attachments -AG

-AG



Dimensions

Product type	T	T ₁	T ₂
	mm		
AT	70	11	92
VAT	70	11	92
AH	70	8	92
AHR	70	8	92
WAP	70	8	92
WAPR	70	8	92
AF	70	0	123
AFH	70	0	123
AFW	70	0	123
AP	70	8	92