

ACCESSORIES



Certificate SA15/2492

SGS

The management system of

**Arabian International Co. for
Steel Structures.**

Makkah and Medina Highway, Al Hijra Street, Asfan Industrial Area,
P.O. Box 41017, Jeddah, 21521, Saudi Arabia

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

**Marketing, Design, Fabrication of Plate Work, Pressure Vessels,
Piping, power boilers, Tanks, Steel Structures, steel ducts, metal work,
Mechanical work and surface treatment.**

Further clarifications regarding the scope of this certificate and the applicability of
ISO 9001:2015 requirements may be obtained by consulting the organisation

This certificate is valid from 5 June 2016 until 5 November 2018 and
remains valid subject to satisfactory surveillance audits.
Re certification audit due before 22 September 2018
Issue 2. Certified since 5 November 2015

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SGS 9001 2015 0216

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Certificate CH17/0097

The management system of

Arabian International Company for Steel Structures

Makkah and Medina Highway, Al Hijra Street, Asfan Industrial Area,
P.O. Box 41017, Jeddah, 21521, Saudi Arabia



has been assessed and certified as meeting the requirements of

OHSAS 18001:2007

For the following activities

**Marketing, Design, Built up, Fabrication, Erection and Installation of
Plate Work, Pressure Vessels, Piping (Low & High Pressure), Power
Boilers, Tanks, Steel Structures, Steel Ducts, Metal Work, Mechanical
Work and Surface Treatment.**

This certificate is valid from 24 January 2017 until 23 January 2020
and remains valid subject to satisfactory surveillance audits
Recertification audit due before 22 December 2019
Issue 1. Certified since January 2017

Authorised by



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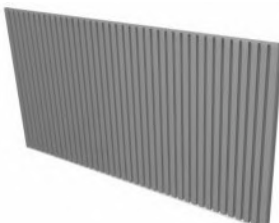
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Arabian International Co. for Steel Structures and Sheet Metal Works (AIC Steel) is leading designer, fabricator and erector of structural steel, sheet metal and towers. We are AIC Sheet Metal Works committed to deliver a wide range of sheet metal work solutions across the world. Incorporated in 2016, AIC sheet metal Works has been serving the needs of HVAC Systems, Cable Management systems, and Sheet Metal Fabrication services. Our industrial facilities are spread across Saudi Arabia, UAE, Egypt, serving the needs of the MENA region. We are qualified professionals who are fully dedicated to serve our clients.

AIC Sheet Metal Works assure high quality standard and committed to maintain an effective Quality Assurance System complying with International Standard ISO9001-2015 (Quality Systems), that will sustain the company's reputation and achieve customer satisfaction. The certificates that AIC holds, is a proof of how serious we are emerging to reach an international standard that we are proud of and keep us on top of the industry in the region

AIC Sheet Metal Works product designs are always based on the relevant international standards and codes to produce cost effective solutions based on accurate calculations validated by advanced testing measures in our labs to ensure products reliability followed by continuous development to fulfill our customer satisfaction.

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Volume Damper

HD01- VCD Single Blade Flange Type



Ordering Code

Product Code : HD01 - TYP M TH A FH - W x H x L

TYPE

Material

Thickness

Actuation

Flange Height

Damper Width

Damper Height

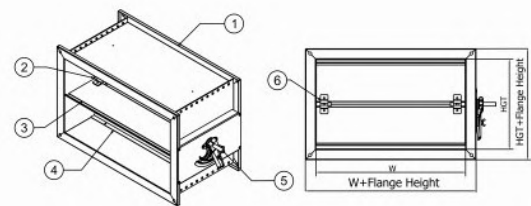
Damper Length

Description

HD01 Volume Control Damper Single Blade Flange type (Quick Connect) is designed to control and regulate Air flow

HD01 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with two options Balancing or ShutOff for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult

HD01- VCD Single Blade Flange Type



1-Frame
4-Blade Stop

2-Bearing
5-Quadrant Bracket

3-Blade
6-Blade Strap

Construction

HD01 selection involves checking of the following requirements: Size, fanges, blade type, bearing and construction material.

Frame:

HD01 Frames is default supplied with 100mm length x 1.5 mm thickness, 35 mm flange height for flange connection. And it is available with varied flange height from 25 to 50mm, frame length from 100 to 300mm with 50 mm step.

Blade:

HD01 Blades is offered with a maximum width of 300mm, with standard thickness of Ga. 18 (1.2mm).

Damper Type:

HD01 is offered in two major types; Shut-off or Balancing Volume Control Dampers.

Material:

HD01 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240.

Thickness:

HD01 is offered with Frame standard thickness of Ga. 16 (1.5mm) and with Ga.18 (1.2mm) or Ga.14 (2mm) optional.

Actuation:

HD01 is offered with Quadrant, Extended Shaft and Automatic actuation.

Flange Height:

Available Flange Heights are: 25 mm / 30mm / 35mm / 40mm / 50mm.

Damper Width:

Available Widths from 100 mm up to 3000 mm.

Damper Height:

Available Heights from 100 mm up to 300mm.

Damper Length:

Available lengths from 100 mm up to 300 mm with 50 mm step.

Case Bearings:

Self-lubricated Sintered Bronze SAE-841.

Axles:

12 mm Round mild steel bar.

Control Shaft:

12 mm Round steel bar 152.5 mm long.

Temperature Limits:

-40°C to 100°C

1

2

3

HD02- VCD Multi Blade Flange Type - Exposed (Parallel)



Ordering Code

Product Code :	HD02	-	TYP	M	TH	1	BM	1	A	FH	-	W	x	H	x	L
TYPE																
Material																
Thickness																
Linkage																
Blade Mechanism																
Linkage Cover State																
Actuation																
Flange Height																
Damper Width																
Damper Height																
Damper Length																

Description

HD02 Volume Control Damper Multi Blade Flange type (Quick Connect) with Exposed Linkage is designed for control and regulate Air flow

HD02 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with two options Balancing or ShutOff for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult

HD02 VCD Multi Blade Flange Type - Exposed (Opposed)



Construction:

HD02 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material.

Frame:

HD02 Frames is default supplied with 100mm length x 1.5 mm thickness 35 mm flange height for flange connection. And it is available with varied flange height from 25 to 50mm, frame length from 100 to 300mm with 50 mm step.

Blade:

HD02 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Damper Type:

HD02 is offered in two major types; Shut-off or Balancing Volume Control Dampers.

Material:

HD02 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240.

Thickness:

HD02 is offered with Frame standard thickness of Ga. 20 (1.0mm), Ga. 16 (1.5mm) and with Ga.18 (1.2mm) or Ga.14 (2mm) optional.

Linkage and Blade Mechanism:

HD02 is offered with exposed face linkage for both parallel and opposed blade operation mechanism.

Actuation:

HD02 is offered with Quadrant, Extended Shaft and Automatic actuation.

Flange Height:

Available Flange Heights are: 25 mm / 30mm / 35mm / 40mm / 50mm.

Damper Width:

Available Widths from 100 mm up to 3000 mm.

Damper Height:

Available Heights from 301 mm up to 2000 mm.

Damper Length:

Available lengths from 100 mm up to 300 mm with 50 mm step.

Case Bearings:

Self-lubricated Sintered Bronze SAE-841.

Axles:

12 mm Round mild steel bar.

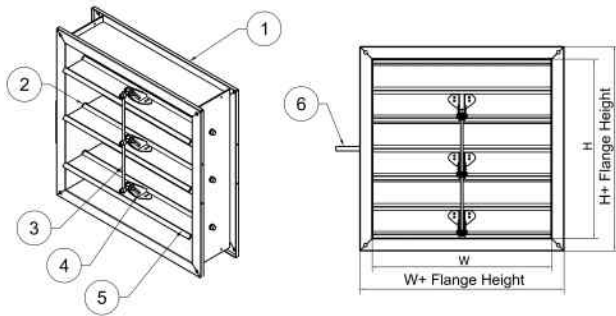
Control Shaft:

12 mm Round steel bar 152.5 mm long.

Temperature Limits:

-40°C to 100°C

HD02-List of Components - Exposed

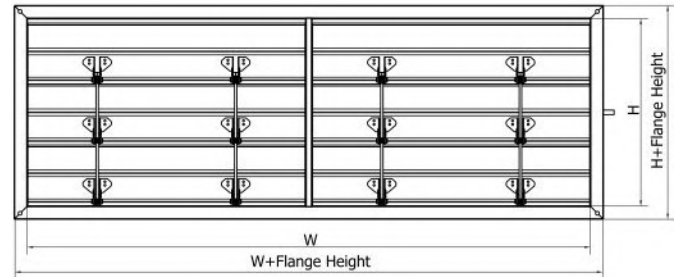


1-Frame
4-Kits

2-Bearing
5-Blade

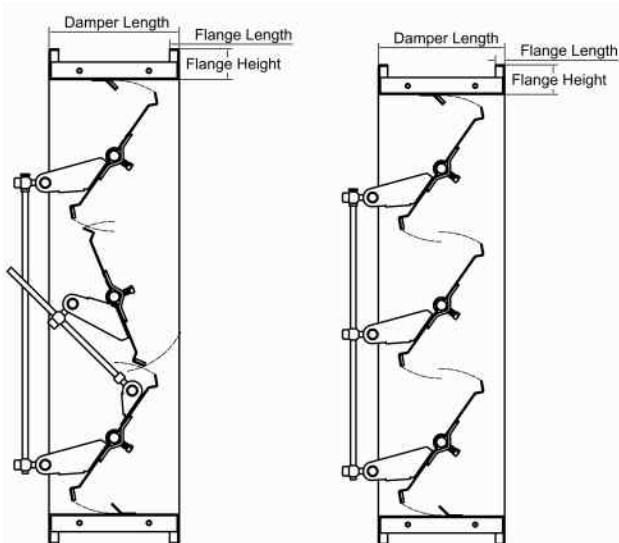
3-Linkage Rod
6-Driving Shaft

HD02-Damper with Separator Configuration



HD02 is offered Damper with Separator for widths greater than 1000 mm.

Parallel/Opposed Blade Mechanism



Number of Blades

Height (H) mm		Number of Blades
From	To	
301	490	2
491	729	3
730	967	4
968	1206	5
1207	1444	6
1445	1683	7
1684	1922	8
1923	2000	9

1
2
3

HD02- VCD Multi Blade Flange Type - Concealed (Parallel)



Ordering Code

Product Code :	HD02	-	TYP	M	TH	2	BM	2	A	FH	-	W	x	H	x	L
TYPE																
Material																
Thickness																
Linkage																
Blade Mechanism																
Linkage Cover State																
Actuation																
Flange Height																
Damper Width																
Damper Height																
Damper Length																

Description

HD02 Volume Control Damper Multi Blade Flange type (Quick Connect) with Concealed Linkage is designed to control and regulate Air flow

HD02 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with two options Balancing or Shut-off for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult

HD02- VCD Multi Blade Flange Type - Concealed (Opposed)



Construction:

HD02 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material.

Frame:

HD02 Frames is default supplied with 100 mm length x 1.5 mm thickness x 35 mm flange height for flange connection. And it is available with varied flange height from 25 to 50mm, frame length from 100 to 300mm with 50 mm step.

Blade:

HD02 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Damper Type:

HD02 is offered in two major types; Shut-off or Balancing Volume Control Dampers.

Material:

HD02 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240.

Thickness:

HD02 is offered with Frame standard thickness of Ga. 20 (1.0mm), Ga. 16 (1.5mm) and with Ga.18 (1.2mm) or Ga.14 (2mm) optional.

Linkage and Blade Mechanism:

HD02- is offered with concealed side linkage for both parallel and opposed blade operation mechanism.

Linkage Cover:

HD02 is supplied with linkage cover as an option.

Actuation:

HD02 is offered with Quadrant, Extended Shaft and Automatic actuation.

Flange Height:

Available Flange Heights are: 25 mm / 30mm / 35mm / 40mm / 50mm.

Damper Width:

Available Widths from 100 mm up to 3000 mm.

Damper Height:

Available Heights from 301 mm up to 2000 mm.

Damper Length:

Available lengths from 100 mm up to 300 mm with 50 mm step.

Case Bearings:

Self-lubricated Sintered Bronze SAE-841.

Axles:

12 mm square mild steel bar.

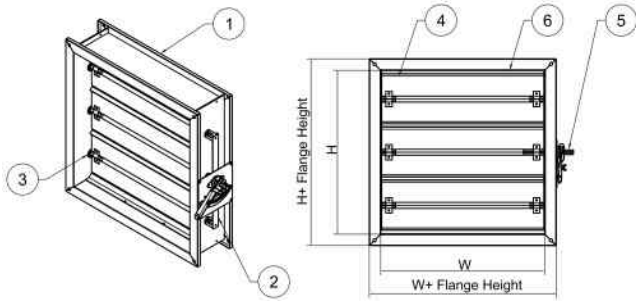
Control Shaft:

12mm Square mild steel bar 140 mm long.

Temperature Limits:

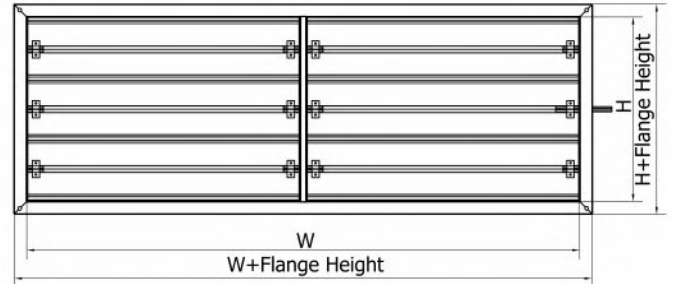
-40°C to 100°C

HD02-List of Components - Concealed



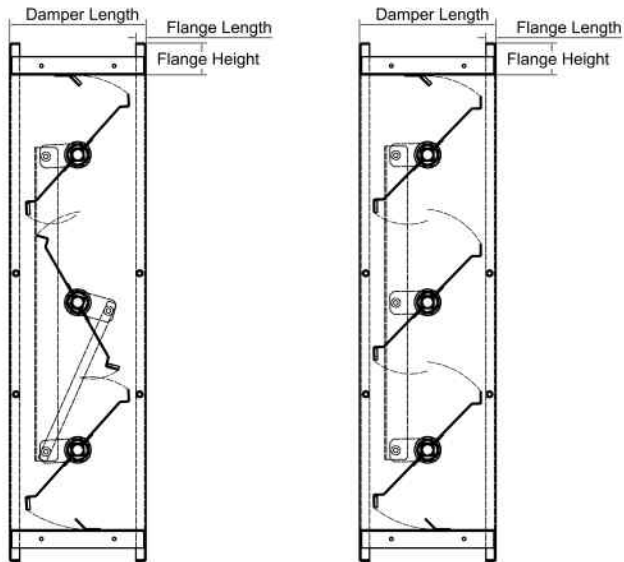
- 1-Frame
- 2-Side Linkage
- 3-Bearing
- 4-Blade
- 5-Drive Shaft
- 6-Blade Stop

HD02-Damper with Separator Configuration



HD02 is offered Damper with Separator for widths greater than 1000 mm.

Parallel/Opposed Blade Mechanism



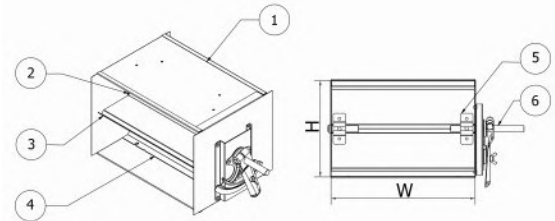
Number of Blades

Height (H) mm		Number of Blades
From	To	
301	490	2
491	729	3
730	967	4
968	1206	5
1207	1444	6
1445	1683	7
1684	1922	8
1923	2000	9

HD03- VCD Single Blade Duct Type



HD03- VCD Single Blade Duct Type



- 1-Frame
- 2-Bearing
- 3-Blade
- 4-Blade Stop
- 5-Blade Strap
- 6-Drive Shaft

Ordering Code

Product Code :	HD03	-	TYP	M1	DTH	CJ	ST	A	F	-	W x H x L
Damper Type											
Duct Material											
Duct Thickness											
Connection Joint											
Seam Type											
Actuation											
Finish											
Duct Width											
Duct Height											
Duct Length											

Description

HD03 Volume Control Damper Single Blade Duct type is designed to control and regulate Air flow

HD03 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with two options Balancing or ShutOff for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult

HD03 is supplied with fabricated Duct conformed with 2005 SMACNA HVAC Duct Construction standards.

Construction

HD03 selection involves checking of the following requirements: Size, flanges, blade type, bearing, construction material, duct material, thickness, liner type, transverse joint, longitudinal seam type and duct finish.

Damper Type:

HD03 is offered in two major types; Shut-off or Balancing Volume Control Dampers.

Material:

HD03 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240 for both Damper and Duct and Aluminum Alloy 3003-H14 in accordance with ASTM B209 for Duct only.

Duct Thickness:

HD03 is offered with different thicknesses-from Ga. 26 (0.55mm) to Ga. 11 (3 mm)- based on agreed schedule

Blade:

HD03 Blades is offered with a maximum width of 300mm, with standard thickness of Ga. 18 (1.2mm).

Duct Transverse Joints:

HD03 duct is offered with various types of SMACNA approved Connections ("S" & Drive, TDC, SLIDE ON FLANGE, Self-Flange, Slotted Angle Bars)

Duct Seam:

HD03 duct is offered with small, large Pittsburg or full welded.

Actuation:

HD03 is offered with removable control shaft for Quadrant and Automatic actuation.

Finish:

Duct openings can be covered based on request
Duct is offered with various paints.

Duct Inner Width:

Available Widths from 100 mm up to 1000 mm, for single section damper.
Available Widths from 1000 mm up to 4000 mm, for Multi section damper.

Duct Inner Height:

Available Heights from 100 mm up to 300 mm, for single section damper.

Duct Length:

HD03 is available with duct length from 200 mm up to 1000 mm.

Temperature Limits:

-40°C to 100°C

*Damper is offered with Case bearing Self-Lubricated Sintered Bronze SAE-841 with 12 mm Round mild steel axles.

HD04- VCD Duct Type - HAT Exposed (Parallel)



Ordering Code

Product Code :	HD04	-	TYP	M1	M2	DTH	LT	CJ	ST	1	BM	A	F	-	W	x	H	x	L
Damper Type																			
Damper Material																			
Duct Material																			
Duct Thickness																			
Liner Type & Thickness																			
Connection Joint																			
Seam Type																			
Linkage																			
Blade Mechanism																			
Actuation																			
Finish																			
Duct Width																			
Duct Height																			
Duct Length																			

Description

HD04 Volume Control Damper Duct type (HAT) with Exposed Linkage is designed for control and regulate Air flow

HD04 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with default Shut-Off for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD04 is supplied with fabricated Duct conformed with 2005 SMACNA HVAC Duct Construction standards.

HD04- VCD Duct Type - HAT Exposed (Opposed)



Construction

HD04 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material, duct material, thickness, liner type, transverse joint, longitudinal seam type and Duct Finish.

Damper Frame:

HD04 Frames is default supplied with 100 mm length x 0.8 or 1.0 mm thickness, 25 mm flange height, suitable to be installed inside the duct. *Flange height may vary depending on Liner and Gasket thicknesses

Blade:

HD04 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Damper Type:

HD04 is offered in two major types; Shut-off Volume Control Dampers with edge seal in each blade and blade end stop, or Balancing Volume Control Dampers.

Material:

HD04 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240 for both Damper and Duct and Aluminum Alloy 3003-H14 in accordance with ASTM B209 for Duct only.

Duct Thickness:

HD04 is offered with different thicknesses-from Ga. 26 (0.55mm) to Ga. 11 (3 mm)- based on agreed schedule.

Liner Type and Thickness:

HD04 is offered with different Liner types and thicknesses, for more detail please refer to Rectangular Duct Section.

Duct Transverse Joints:

HD04 duct is offered with various types of SMACNA approved Connections ("S" & Drive, TDC, SLIDE ON FLANGE, Self-Flange, Slotted Angle Bars).

Duct Seam:

HD04 duct is offered with small, large Pittsburg or full welded.

Linkage and Blad Mechanism:

HD04 is offered with exposed face linkage for both Parallel and Opposed blade operation Mechanism

Actuation:

HD04 is offered with removable control shaft for Quadrant and Automatic actuation.

Finish:

Duct openings can be covered based on request
Duct is offered with various paints.

Duct Inner Width:

Available Widths from 200 mm up to 1000 mm, for single section damper.
And from 1000 mm up to 4000 mm for Multi section damper.

Duct Inner Height:

Available Heights from 200 mm up to 1200 mm, for single section damper.
And from 1200 mm up to 3600 mm for Multi Section damper.

Duct Length:

HD04 is available with duct length from 200 mm up to 1000 mm.

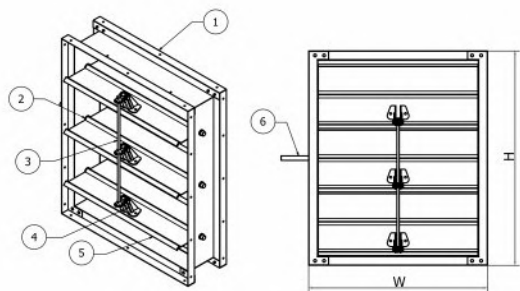
Temperature Limits:

-40°C to 100°C

*Damper is offered with Case bearing Self-Lubricated Sintered Bronze SAE-841 with 12 mm Round mild steel axles.

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2
3

HD04-List of Components - Exposed



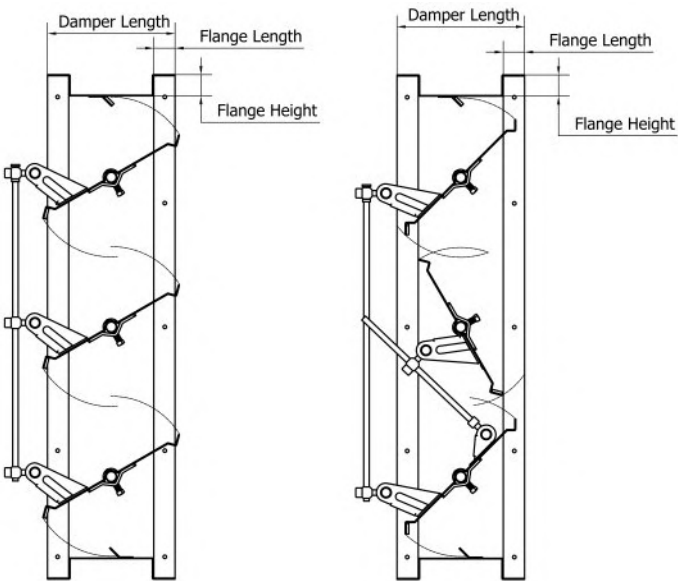
- 1-Frame
4-KIT
- 2-Bearing
5-Blade
- 3-Linkage Rod
6-Drive Shaft

Number of Blades of Single Section Damper

Duct Height (H) mm		Number of Blades
From	To	
200	356	1
357	546	2
547	785	3
786	1023	4
1024	1200	5

*Number of Blades may vary depending on Liner thickness.

Parallel/Opposed Blade Mechanism (Exposed)



HD04- VCD Duct Type - HAT Concealed (Parallel)



Ordering Code

Product Code :	HD04	-	TYP	M1	M2	DTH	LT	CJ	ST	2	BM	A	F	-	W x H x L
Damper Type															
Damper Material															
Duct Material															
Duct Thickness															
Liner Type & Thickness															
Connection Joint															
Seam Type															
Linkage															
Blade Mechanism															
Actuation															
Finish															
Duct Width															
Duct Height															
Duct Length															

Description

HD04 Volume Control Damper Duct type (HAT) with Concealed Linkage is designed for control and regulate Air flow.

HD04 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with default Shut-Off for medium leakage, Thanks to Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD04 is supplied with fabricated Duct conformed with 2005 SMACNA HVAC Duct Construction standards.

HD04- VCD Duct Type - HAT Concealed (Opposed)



Construction

HD04 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material, duct material, thickness, liner type, transverse joint, longitudinal seam type and Duct Finish.

Damper Frame:

HD04 Frames is default supplied with 100 mm length x 0.8 or 1.0 mm thickness, 25 mm flange height, suitable to be installed inside the duct. *Flange height may vary depending on Liner and Gasket thicknesses

Blade:

HD04 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Damper Type:

HD04 is offered in two major types; Shut-off Volume Control Dampers with edge seal in each blade and blade end stop, or Balancing Volume Control Dampers.

Material:

HD04 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240 for both Damper and Duct and Aluminum Alloy 3003-H14 in accordance with ASTM B209 for Duct only.

Duct Thickness:

HD04 is offered with different thicknesses-from Ga. 26 (0.55mm) to Ga. 11 (3 mm)- based on agreed schedule.

Liner Type and Thickness:

HD04 is offered with different Liner types and thicknesses, for more detail please refer to Rectangular Duct Section.

Duct Transverse Joints:

HD04 duct is offered with various types of SMACNA approved Connections ("S" & Drive, TDC, SLIDE ON FLANGE, Self-Flange, Slotted Angle Bars).

Duct Seam:

HD04 duct is offered with small, large Pittsburg or full welded.

Linkage and Blad Mechanism:

HD04 is offered with Concealed side linkage for both Parallel and Opposed blade operation Mechanism

Actuation:

HD04 is offered with removable control shaft for Quadrant and Automatic actuation.

Finish:

Duct openings can be covered based on request
Duct is offered with various paints.

Duct Inner Width:

Available Widths from 200 mm up to 1000 mm, for single section damper.
And from 1000 mm up to 4000 mm for Multi section damper.

Duct Inner Height:

Available Heights from 357 mm up to 1200 mm, for single section damper.
And from 1200 mm up to 3600 mm for Multi Section damper.

Duct Length:

HD04 is available with duct length from 300 mm up to 1000 mm.

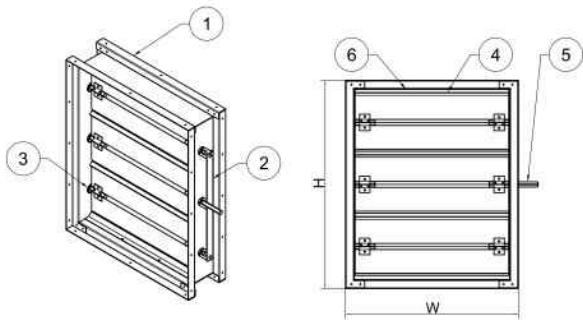
Temperature Limits:

-40°C to 100°C

*Damper is offered with Case bearing Self-Lubricated Sintered Bronze SAE-841 with 12 mm Round mild steel axles.

1
2
3

HD04-List of Components - Concealed



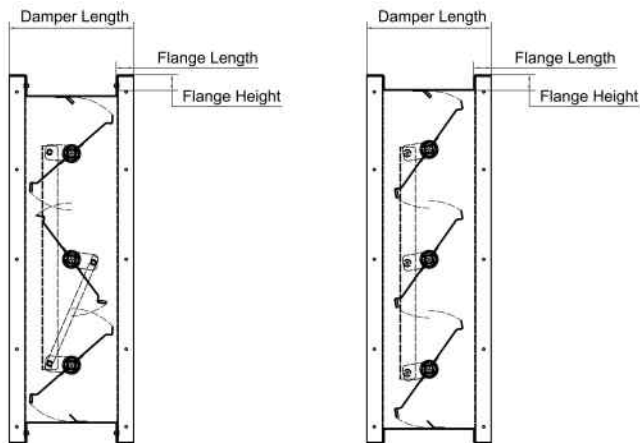
- 1-Frame
4-Blade
- 2-Side Linkage
5-Drive Shaft (Removable)
- 3-Bearing
6-Blade Stop

Number of Blades of Single Section Damper

Duct Height (H) mm		Number of Blades
From	To	
200	356	1
357	546	2
547	785	3
786	1023	4
1024	1200	5

*Number of Blades may vary depending on Liner thickness.

Parallel/Opposed Blade Mechanism (Concealed)

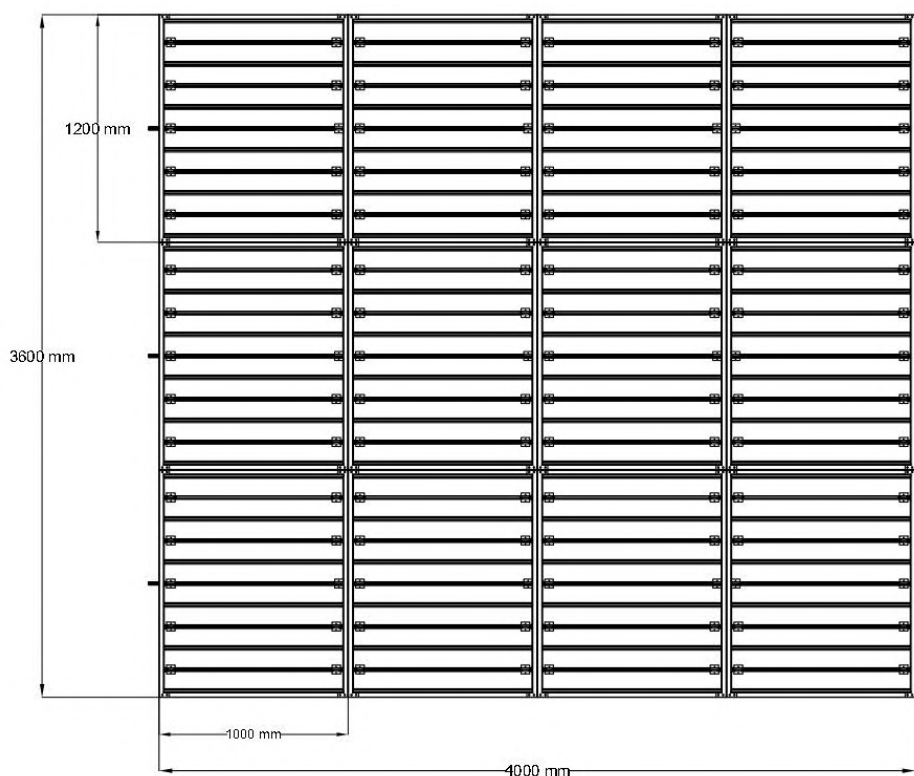


HD04-Damper with Multi Section Configuration

HD04 is offered with Multi Section Configuration for duct widths greater than 1000 mm and for heights greater than 1200 mm
HD04 Multi Section Configuration is available with both exposed and concealed mechanisms.

Multi Section Size Arrangements				
Duct Width Up to (mm)	Duct Height Up to (mm)	No. of Columns	No. of Rows	No. of Control Shafts
1000	1200	1	1	1
1000	2400	1	2	2
1000	3600	1	3	3
2000	1200	2	1	1
2000	2400	2	2	2
2000	3600	2	3	3
3000	1200	3	1	2
3000	2400	3	2	4
3000	3600	3	3	6
4000	1200	4	1	2
4000	2400	4	2	4
*4000	3600	4	3	6

*The maximum available size is 4000 x 3600 mm



* For HD04 Multi Section Configuration exposed arrangement please consult AIC

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Low Leakage

Volume Damper

HD05- VCD Low leakage Single Blade Flange Type



Ordering Code

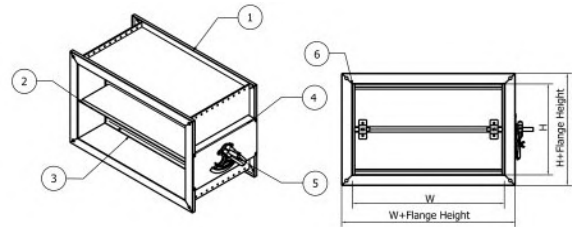
Product Code :	HD05	-	M	TH	A	FH	-	W	x	H	x	L
Material												
Thickness												
Actuation												
Flange Height												
Damper Width												
Damper Height												
Damper Length												

Description

HD05 Volume Control Damper Low Leakage Single Blade Flange type (Quick Connect) is designed for volume flow and pressure control as well as for low-leakage shut-off of ducts and openings in walls and ceiling slabs

HD05 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with jamb seal in both sides and special rubber grommet for low leakage applications, Thanks to special Frame Design with Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD05- VCD Low Leakage Single Blade Flange Type



- 1-Frame
- 2-Blade
- 3-Blade Stop
- 4-Quadrant Bracket
- 5-Quadrant
- 6-Jamb seal

Construction

HD05 selection involves checking of the following requirements: Size, fanges, blade type, bearing and construction material.

Frame:

HD05 Frames is default supplied with 100mm length x 1.5 mm thickness, 35 mm flange height for flange connection. And it is available with varied flange height from 25 to 50mm, frame length from 100 to 300mm with 50 mm step.

Blade:

HD05 Blades is offered with a maximum width of 300mm, with standard thickness of Ga. 18 (1.2mm).

Material:

HD05 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240.

Thickness:

HD05 is offered with Frame standard thickness of Ga. 16 (1.5mm) and with Ga.18 (1.2mm) or Ga.14 (2mm) optional.

Side Seal:

HD05 is offered with Compression type stainless steel grade 304 jamb seal to close gap between frame and blades.

Actuation:

HD05 is offered with Quadrant, Extended Shaft and Automatic actuation.

Flange Height:

Available Flange Heights are: 25 mm / 30mm / 35mm / 40mm / 50mm.

Damper Width:

Available Widths from 100 mm up to 1200 mm.

Damper Height:

Available Heights from 100 mm up to 300mm.

Damper Length:

Available lengths from 100 mm up to 300 mm with 50 mm step.

Case Bearings:

Self-lubricated Sintered Bronze SAE-841.

Axles:

12 mm Round mild steel bar.

Control Shaft:

12 mm Round steel bar 152.5 mm long.

Temperature Limits:

-40°C to 100°C

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HD06- VCD Low Leakage Multi Blade Flange Type- Exposed (Parallel)



Ordering Code

Product Code :	HD06	-	M	TH	1	BM	A	FH	-	W	x	H	x	L
Material														
Thickness														
Linkage														
Blade Mechanism														
Actuation														
Flange Height														
Damper Width														
Damper Height														
Damper Length														

Description

HD06 Volume Control Damper Low Leakage Multi Blade Flange type (Quick Connect) with Exposed Linkage is designed for volume flow and pressure control as well as for low-leakage shut-off of ducts and openings in walls and ceiling slabs.

HD06 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with jamb seal in both sides and special rubber grommet for low leakage applications. Thanks to special Frame Design with Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD06 VCD Low Leakage Multi Blade Flange Type - Exposed (Opposed)



Construction:

HD06 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material.

Frame:

HD06 Frames is default supplied with 100 mm length x 1.5 mm thickness 35 mm flange height for flange connection. And it is available with varied flange height from 25 to 50mm, frame length from 100 to 300mm with 50 mm step.

Blade:

HD06 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Material:

HD06 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240.

Thickness:

HD06 is offered with Frame standard thickness of Ga. 16 (1.5mm) and with Ga. 18 (1.2mm) or Ga. 14 (2mm) optional.

Linkage and Blade Mechanism:

HD06 is offered with exposed face linkage for both parallel and opposed blade operation mechanism.

Side Seal:

HD06 is offered with Compression type stainless steel grade 304 jamb seal to close gap between frame and blades.

Actuation:

HD06 is offered with Quadrant, Extended Shaft and Automatic

Flange Height:

Available Flange Heights are: 25 mm / 30mm / 35mm / 40mm / 50mm.

Damper Width:

Available Widths from 100 mm up to 1200 mm.

Damper Height:

Available Heights from 301 mm up to 2000 mm.

Damper Length:

Available lengths from 100 mm up to 300 mm with 50 mm step.

Case Bearings:

Self-lubricated Sintered Bronze SAE-841.

Axles:

12 mm Round mild steel bar.

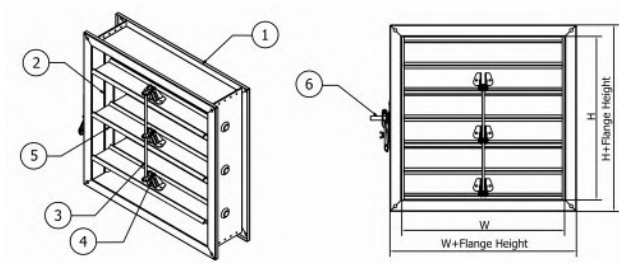
Control Shaft:

12 mm Round steel bar 152.5 mm long.

Temperature Limits:

-40°C to 100°C

HD06-List of Components - Exposed Low Leakage Damper

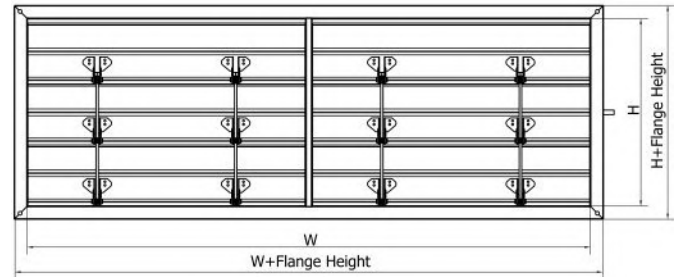


1-Frame
4-Kits

2-Jamb Seal
5-Blade

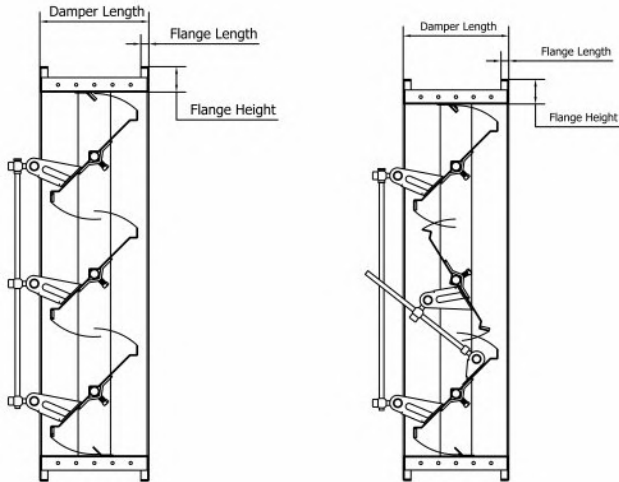
3-Linkage Rod
6-Driving Shaft

HD06-Damper with Separator Configuration Low Leakage Damper



HD06 is offered Damper with Separator for widths greater than 1000 mm.

Parallel/Opposed Blade Mechanism



Number of Blades

Height (H) mm		Number of Blades
From	To	
301	490	2
491	729	3
730	967	4
968	1206	5
1207	1444	6
1445	1683	7
1684	1922	8
1923	2000	9

HD07- VCD Low leakage Single Blade Duct Type - HAT



Ordering Code

Product Code :	HD07	- M1	M2	DTH	LT	CJ	ST	A	F	- W x H x L
Damper Material										
Duct Material										
Duct Thickness										
Liner Type & Thickness										
Connection Joint										
Seam Type										
Actuation										
Finish										
Duct Width										
Duct Height										
Duct Length										

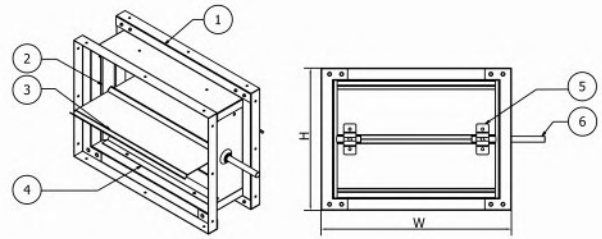
Description

HD07 Volume Control Damper Low Leakage Single Blade Duct type (HAT) is designed to control and regulate Air flow for low leakage Applications.

HD07 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with jamb seal in both sides and special rubber grommet for low leakage applications. Thanks to special Frame Design with Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD07 is supplied with fabricated Duct conformed with 2005 SMACNA HVAC Duct Construction standards.

HD07- VCD Low Leakage Single Blade Duct Type - HAT



1-Frame
4-Blade Stop

2-Jamb Seal
5-Blade Strap

3-Blade
6-Drive Shaft

Construction

HD07 selection involves checking of the following requirements: Size, flanges, blade type, bearing, construction material, duct material, thickness, liner type, transverse joint, longitudinal seam type and duct finish.

Frame:

HD07 Frames is default supplied with 100 mm length x 0.8 or 1.0 mm thickness x 25 mm flange height, suitable to be installed inside the duct. *Flange height may vary depending on Liner and Gasket thicknesses

Blade:

HD07 Blades is offered with a maximum width of 300mm, with standard thickness of Ga. 18 (1.2mm).

Material:

HD07 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240 for both Damper and Duct and Aluminum Alloy 3003-H14 in accordance with ASTM B209 for Duct only.

Duct Thickness:

HD07 is offered with different thicknesses-from Ga. 26 (0.55mm) to Ga. 11 (3 mm)- based on agreed schedule

Liner Type and Thickness:

HD07 is offered with different Liner types and thicknesses, for more detail please refer to Rectangular Duct Section.

Duct Transverse Joints:

HD07 duct is offered with various types of SMACNA approved Connections (*S" & Drive, TDC, SLIDE ON FLANGE, Self-Flange, Slotted Angle Bars)

Duct Seam:

HD07 duct is offered with small, large Pittsburg or full welded.

Side Seal:

HD07 is offered with Compression type stainless steel grade 304 jamb seal to close gap between frame and blades.

Actuation:

HD07 is offered with removable control shaft for Quadrant and Automatic actuation.

Finish:

Duct openings can be covered based on request
Duct is offered with various paints.

Duct Inner Width:

Available Widths from 200 mm up to 1000 mm, for single section damper.
Available Widths from 1000 mm up to 4000 mm, for Multi section damper.

Duct Inner Height:

Available Heights from 200 mm up to 356 mm, for single section damper.

Duct Length:

HD07 is available with duct length from 300 mm up to 1000 mm.

Temperature Limits:

-40°C to 100°C

*Damper is offered with Case bearing Self-Lubricated Sintered Bronze SAE-841 with 12 mm Round mild steel axles.

HD08- VCD Low Leakage Multi Blade Duct Type - HAT Exposed (Parallel)



Ordering Code

Product Code :	HD08	-	M1	M2	DTH	LT	CJ	ST	1	BM	A	F	-	W x H x L
Damper Material														
Duct Material														
Duct Thickness														
Liner Type & Thickness														
Connection Joint														
Seam Type														
Linkage														
Blade Mechanism														
Actuation														
Finish														
Duct Width														
Duct Height														
Duct Length														

Description

HD08 Volume Control Damper Low leakage Multi Blade Duct type (HAT) with Exposed Linkage is designed for control and regulate Air flow in Low leakage Applications.

HD08 is designed to work at velocity up to 2000 FPM and pressure up to 2 w.g., with jamb seal in both sides and special rubber grommet for low leakage applications, Thanks to special Frame Design with Bronze sintered (oil impregnated) self-lubricating oilite bearings for providing long time lubrication making them ideal for use in applications where proper maintenance is uncertain or difficult.

HD08 is supplied with fabricated Duct conformed with 2005 SMACNA HVAC Duct Construction standards.

HD08- VCD Low Leakage Multi Blade Duct Type - HAT Exposed (Opposed)



Construction

HD08 selection involves checking of the following requirements: Size, flanges, blade type, bearing, opposed or parallel, linkage and construction material, duct material, thickness, liner type, transverse joint, longitudinal seam type and Duct Finish.

Damper Frame:

HD08 Frames is default supplied with 100 mm length x 0.8 or 1.0 mm thickness, 25 mm flange height, suitable to be installed inside the duct.

*Flange height may vary depending on Liner and Gasket thicknesses

Blade:

HD08 Blades is offered with a maximum width of 250mm, with standard thickness of Ga. 18 (1.2mm).

Material:

HD08 is supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 with both regular and zero spangle and Stainless steel 304 and 316 in accordance with ASTM A240 for both Damper and Duct and Aluminum Alloy 3003-H14 in accordance with ASTM B209 for Duct only.

Duct Thickness:

HD08 is offered with different thicknesses-from Ga. 26 (0.55mm) to Ga. 11 (3 mm)- based on agreed schedule.

Liner Type and Thickness:

HD08 is offered with different Liner types and thicknesses, for more detail please refer to Rectangular Duct Section.

Duct Transverse Joints:

HD08 duct is offered with various types of SMACNA approved Connections ("S" & Drive, TDC, SLIDE ON FLANGE, Self-Flange, Slotted Angle Bars).

Duct Seam:

HD08 duct is offered with small, large Pittsburg or full welded.

Side Seal:

HD08 is offered with Compression type stainless steel grade 304 jamb seal to close gap between frame and blades.

Linkage and Blad Mechanism:

HD08 is offered with exposed face linkage for both Parallel and Opposed blade operation Mechanism

Actuation:

HD08 is offered with removable control shaft for Quadrant and Automatic actuation.

Finish:

Duct openings can be covered based on request

Duct is offered with various paints.

Duct Inner Width:

Available Widths from 200 mm up to 1000 mm, for single section damper. And from 1000 mm up to 4000 mm for Multi section damper.

Duct Inner Height:

Available Heights from 357 mm up to 1200 mm, for single section damper. And from 1200 mm up to 3600 mm for Multi Section damper.

Duct Length:

HD04 is available with duct length from 300 mm up to 1000 mm.

Temperature Limits:

-40°C to 100°C

*Damper is offered with Case bearing Self-Lubricated Sintered Bronze SAE-841 with 12 mm Round mild steel axles.

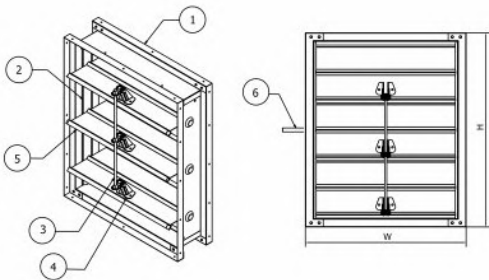
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HD08-List of Components - Exposed



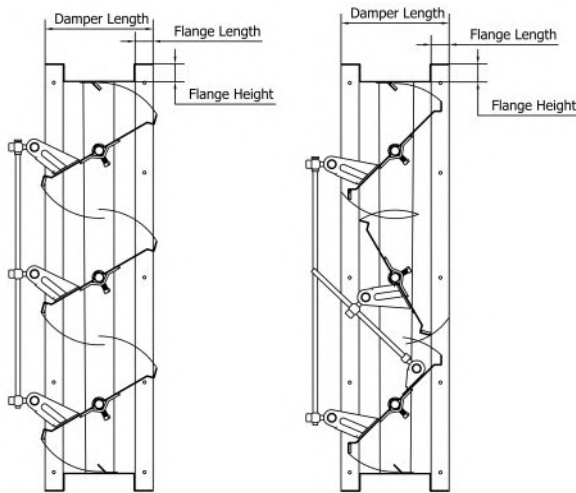
- 1-Frame
4-KIT
- 2-Jamb Seal
5-Blade
- 3-Linkage Rod
6-Drive Shaft

Number of Blades of Single Section Damper

Duct Height (H) mm		Number of Blades
From	To	
357	546	2
547	785	3
786	1023	4
1024	1200	5

*Number of Blades may vary depending on Liner thickness.

Parallel/Opposed Blade Mechanism (Exposed)

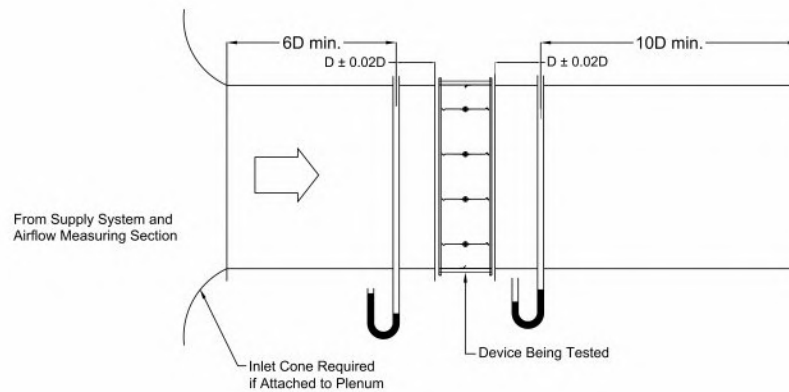


Low leakage Volume Control Dampers Performance Data

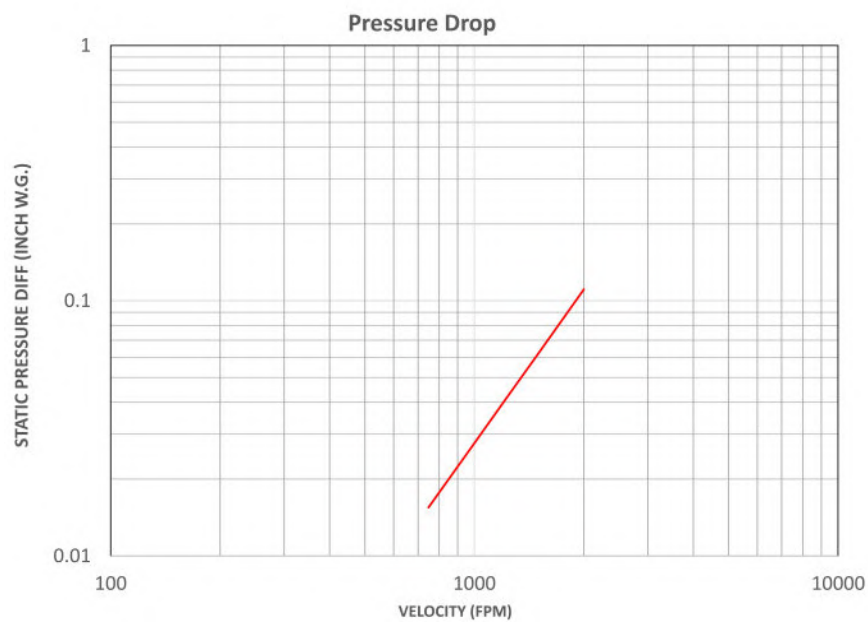
Pressure drop of Low leakage volume control dampers is conformed with ANSI / AMCA Standard 500-D. Below figure simulates the real condition when installed in ventilation, supply and return air conditioning ducts.

*Performance shown at standard air density 0.0765 lbm/ft³

* Test Size 36 in.Width x 36 in.Height



Test Damper Setup with Inlet and Outlet Ducts



*For More detail about performance data, please consult AIC.

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Plenum & Diffuser Box

HB01- SQ Diffuser Box (Side Entry)



Ordering Code

Product Code : HB01 - M TH LT ST SP - W x D x H x h

Material	M	TH	LT	ST	SP	W	D	H	h
Thickness									
Liner Type & Thickness									
Seam Type									
Spigot Option									
Diffuser Width									
Spigot Diameter									
Plenum Height									
Spigot Height									

Description

Square Diffuser Box side entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB01 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB01 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB01 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m³ or 24kg/m³ density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners. Other Liner type and thicknesses are available upon request.

Seam Type:

HB01 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

Spigot Option:

HB01 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, for more detail please refer next page.

Diffuser width:

HB01 is offered with different diffuser sizes start from 150mm to 650mm.

Spigot Diameter:

HB01 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

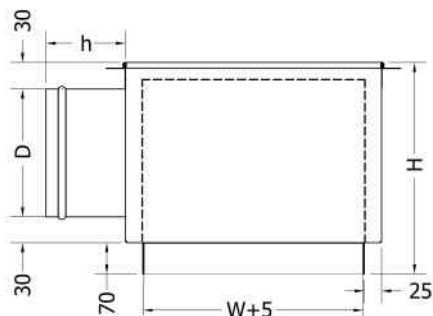
Plenum Height:

HB01 is offered with standard height $H = D + 130$ mm, other heights are available upon request.

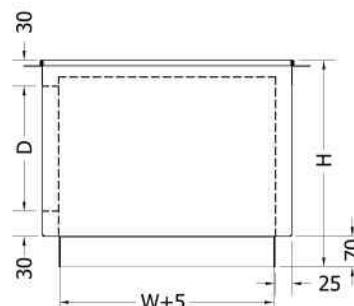
Spigot Height:

HB01 is offered with standard height $h = 100$ mm, and also available from 100 mm up to 300 mm

HB01- SQ. Diffuser Box with spin Collar

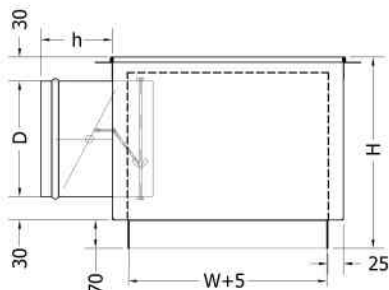


HB01- SQ. Diffuser Box with spigot inlet

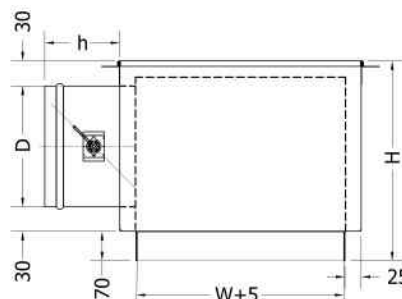


* h = 100 mm minimum.

HB01- SQ. Diffuser Box with Optional Spin Damper (Face Control)



HB01- SQ. Diffuser Box with Optional Spin Damper (Ceiling Control)



Optional spin damper adjusted from face of diffuser.

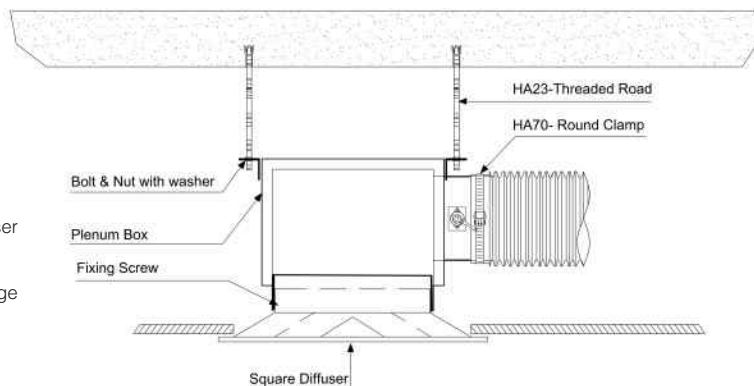
Optional spin damper adjusted through ceiling.

HB01- SQ. Diffuser Box installation instructions

1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.

Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.



HB02- SQ. Diffuser Box (Top Entry)



Ordering Code

Product Code :	HB02	-	M	TH	LT	ST	SP	-	W	x	D	x	H	x	h
Material															
Thickness															
Liner Type & Thickness															
Seam Type															
Spigot Option															
Diffuser Width															
Spigot Diameter															
Plenum Height															
Spigot Height															

Description

Square diffuser box top entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB02 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB02 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB02 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m³ or 24kg/m³ density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners.

Other Liner type and thicknesses are available upon request.

Seam Type:

HB02 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

Spigot Option:

HB02 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, for more detail please refer next page.

Diffuser width:

HB02 is offered with different diffuser sizes start from 150mm to 650mm.

Spigot Diameter:

HB02 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

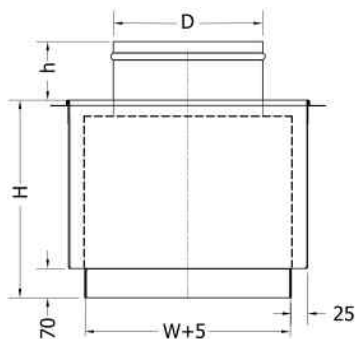
Plenum Height:

HB02 is offered with different heights upon request.

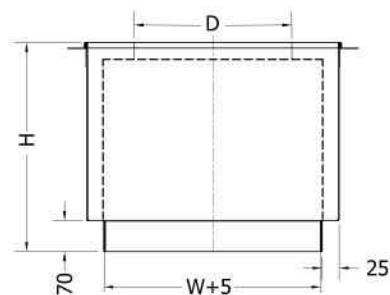
Spigot Height:

HB02 is offered with standard height h= 100 mm, and also available from 100 mm up to 300 mm

HB02- SQ. Diffuser Box with spin Collar

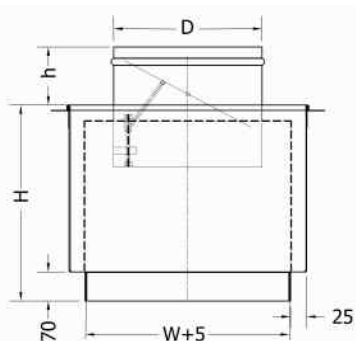


HB02- SQ. Diffuser Box with spigot inlet



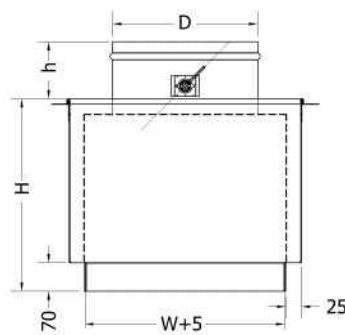
* h = 100 mm minimum

HB02- SQ. Diffuser Box with Optional Spin Damper (Face Control)



Optional spin damper adjusted from face of diffuser.

HB02- SQ. Diffuser Box with Optional Spin Damper (Ceiling Control)



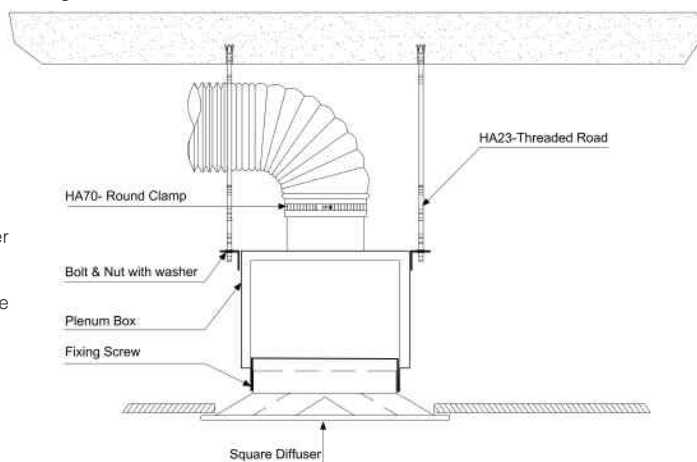
Optional spin damper adjusted through ceiling.

HB02- SQ. Diffuser Box installation instructions

1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.

Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.



HB03- Round Diffuser Box (Side Entry)



Ordering Code

Product Code :	HB03	-	M	TH	LT	ST	SP	-	D	x	d	x	H	x	h
Material															
Thickness															
Liner Type & Thickness															
Seam Type															
Spigot Option															
Diffuser Diameter															
Spigot Diameter															
Plenum Height															
Spigot Height															

Description

Round diffuser box side entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB03 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB03 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB03 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m³ or 24kg/m³ density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners.

Other Liner type and thicknesses are available upon request.

Seam Type:

HB03 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

Spigot Option:

HB03 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, for more detail please refer next page.

Diffuser Diameter:

HB03 is offered with different diffuser sizes start from 150mm to 650mm.

Spigot Diameter:

HB03 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

Plenum Height:

HB03 is offered with standard height $H = d + 110$ mm, other heights are available upon request.

Spigot Height:

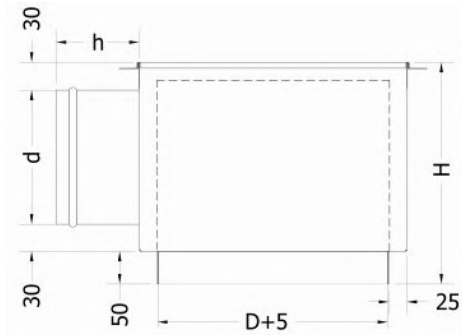
HB03 is offered with standard height $h = 100$ mm, and also available from 100 mm up to 300 mm

1

2

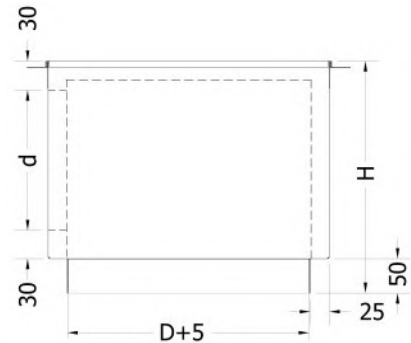
3

HB03- Round Diffuser Box With Spin Collar

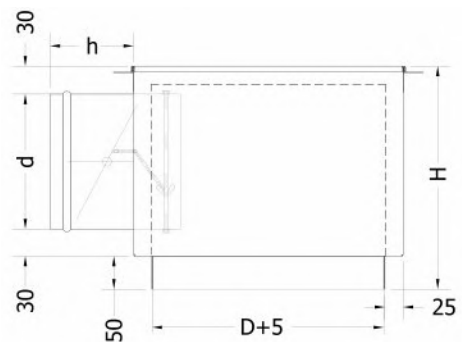


* h = 100 mm minimum.

HB03- Round Diffuser Box With spigot inlet

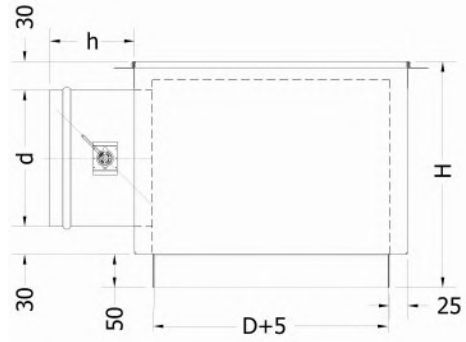


HB03- Round Diffuser Box with Optional Spin Damper (Face Control)



Optional spin damper adjusted from face of diffuser.

HB03- Round Diffuser Box with Optional Spin Damper (Ceiling Control)



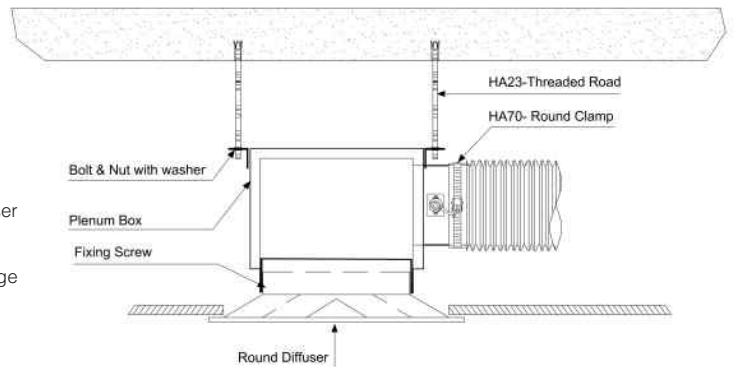
Optional spin damper adjusted through ceiling.

HB03- Round Diffuser Box installation instructions

1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.

Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.



HB04- Round Diffuser Box (Top Entry)



Ordering Code

Product Code : HB04 - M TH LT ST SP - D x d x H x h

Material

Thickness

Liner Type & Thickness

Seam Type

Spigot Option

Diffuser Diameter

Spigot Diameter

Plenum Height

Spigot Height

Description

Round diffuser box top entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB04 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB04 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB04 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m3 or 24kg/m3 density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners. Other Liner type and thicknesses are available upon request.

Seam Type:

HB04 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

Spigot Option:

HB04 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, for more detail please refer next page.

Diffuser Diameter:

HB04 is offered with different diffuser sizes start from 150mm to 650mm.

Spigot Diameter:

HB04 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

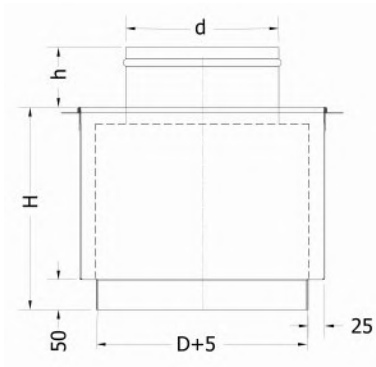
Plenum Height:

HB04 is offered with different heights upon request.

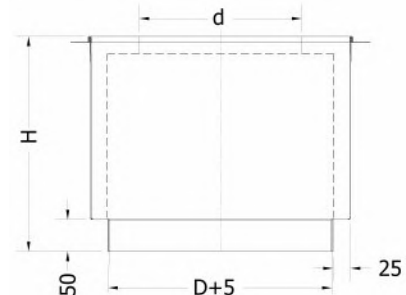
Spigot Height:

HB04 is offered with standard height h= 100 mm, and also available from 100 mm up to 300 mm

HB04- Round Diffuser Box With Spin Collar

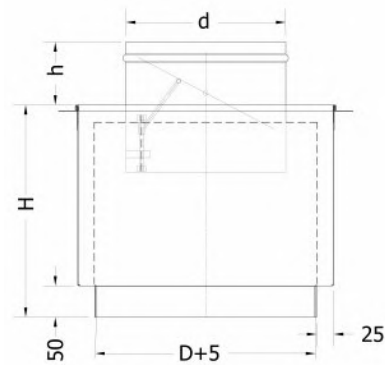


HB04- Round Diffuser Box With spigot inlet



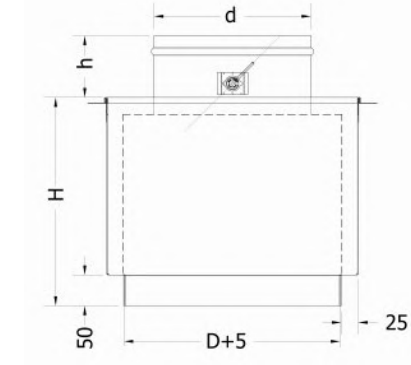
* h = 100 mm minimum.

HB04- Round Diffuser Box with Optional Spin Damper (Face Control)



Optional spin damper adjusted from face of diffuser.

HB04- Round Diffuser Box with Optional Spin Damper (Ceiling Control)



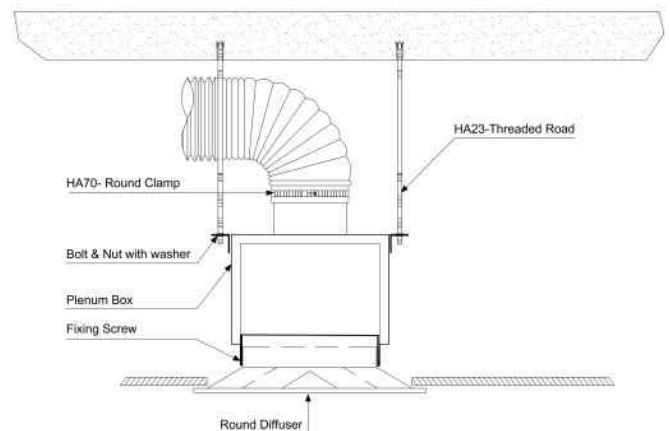
Optional spin damper adjusted through ceiling.

HB04- Round Diffuser Box installation instructions

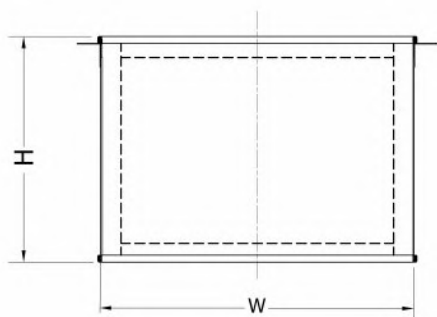
1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.

Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.



HB05- Diffuser Box (Closed)



Ordering Code

Product Code : HB05 - M TH LT ST - W x H x L

Material

Thickness

Liner Type & Thickness

Seam Type

Width

Height

Length

Description

Diffuser box (Closed) is designed to allow flexibility on site.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB05 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB05 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 11 (3.0 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB05 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m3 or 24kg/m3 density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners. Other Liner type and thicknesses are available upon request.

Seam Type:

HB05 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

Size:

HB05 is offered with different sizes upon request.

HB11- Plenum Box - Slot Diffuser (Side Entry)



Ordering Code

Product Code :	HB11	-	M	TH	LT	ST	NS	SP	-	W	x	L	x	D	x	H	x	h
Material																		
Thickness																		
Liner Type & Thickness																		
Seam Type																		
No. of Spigots																		
Spigot Option																		
Diffuser Width																		
Diffuser Length																		
Spigot Diameter																		
Plenum Height																		
Spigot Height																		

Description

Plenum box for slot diffuser-side entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB11 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB11 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm), other thicknesses are available upon request.

Liner Type and Thickness:

HB11 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m³ or 24kg/m³ density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners. Other Liner type and thicknesses are available upon request.

Seam Type:

HB11 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

No. of Spigot:

HB11 is offered with one spigot inlet in the middle and with various number of Spigot inlets upon request.

Spigot Option:

HB11 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, more detail please refer next pages.

Diffuser width:

HB11 is offered with different diffuser sizes starting from 40 mm up to 450mm.

Diffuser Width range (mm)	Corresponded to Diffuser No. of Slots
35 to 60	1
65 to 105	2
90 to 150	3
126 to 190	4
140 to 235	5
180 to 280	6
210 to 325	7
230 to 450	8

Spigot Diameter:

HB11 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

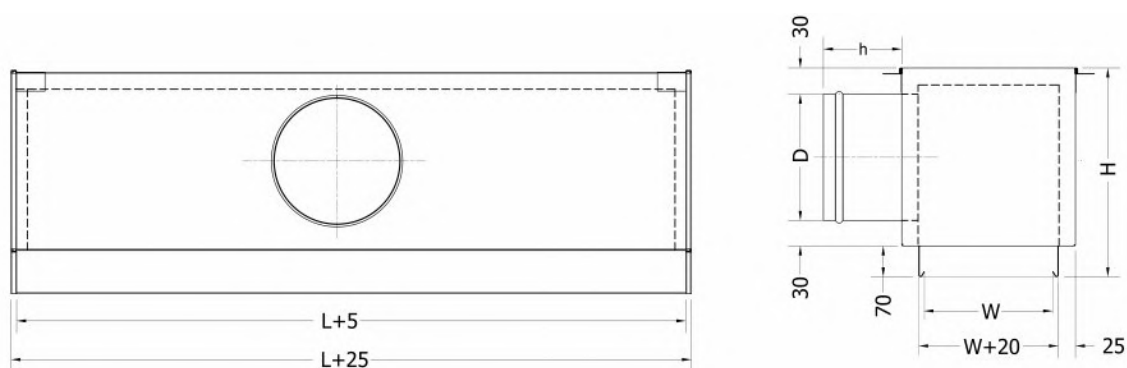
Plenum Height:

HB11 is offered with standard height $H = D + 130$ mm, other heights are available upon request.

Spigot Height:

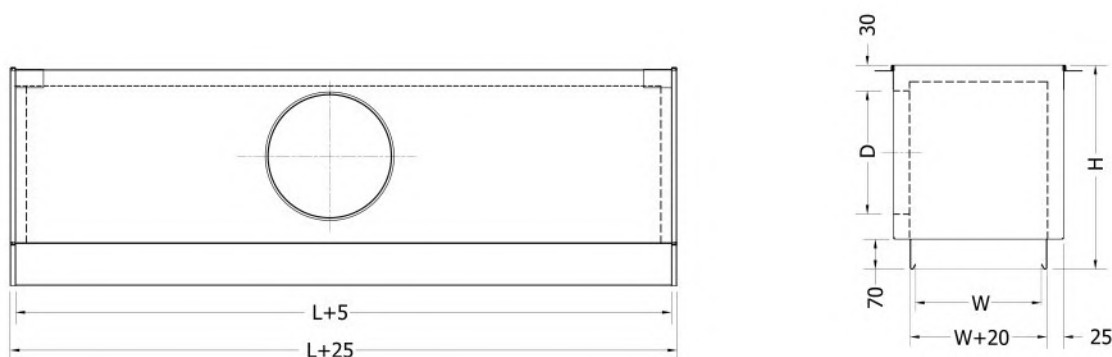
HB11 is offered with standard height $h = 100$ mm, and also available from 100 mm up to 300 mm

HB11- Plenum Box for Slot Diffuser with Spin Collar

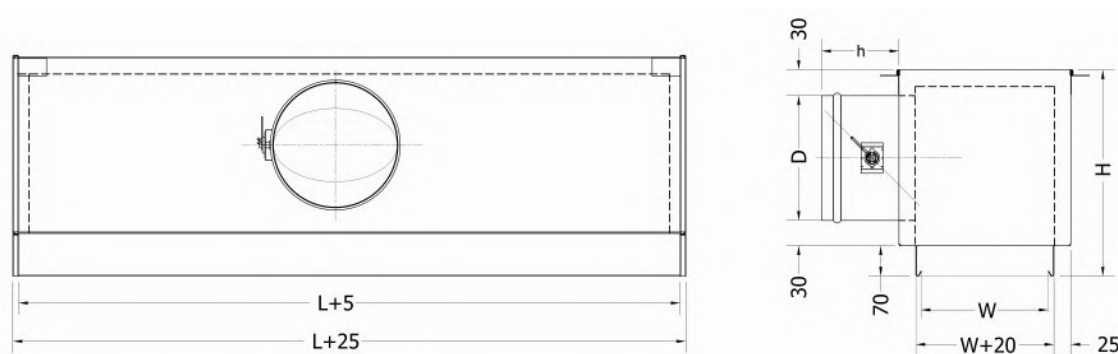


* h = 100 mm minimum

HB11- Plenum Box for Slot Diffuser with spigot inlet.

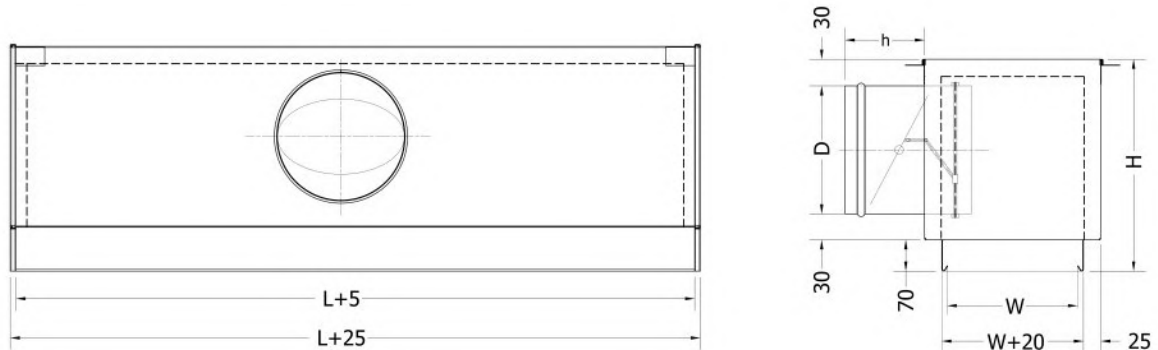


HB11- Plenum Box for Slot Diffuser with Optional Spin Damper (Ceiling Control)



Optional spin damper adjusted through ceiling.

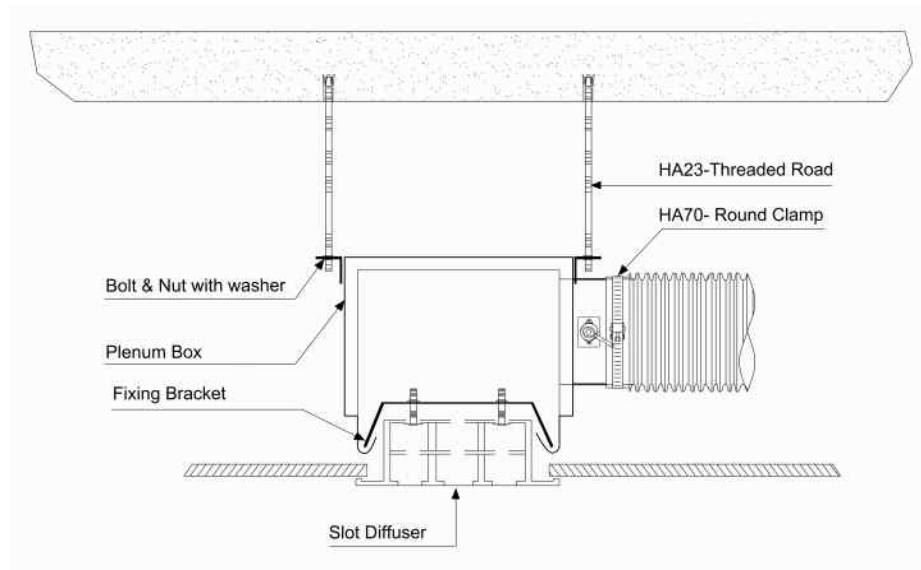
HB11- Plenum Box for Slot Diffuser with Optional Spin Damper (Face Control)



Optional spin damper adjusted from face of diffuser

HB11- Plenum Box installation instructions

1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.



Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.

HB12- Plenum Box - Slot Diffuser (Top Entry)



Ordering Code

Product Code :	HB12	-	M	TH	LT	ST	NS	SP	-	W	x	L	x	D	x	H	x	h
Material																		
Thickness																		
Liner Type & Thickness																		
Seam Type																		
No. of Spigots																		
Spigot Option																		
Diffuser Width																		
Diffuser Length																		
Spigot Diameter																		
Plenum Height																		
Spigot Height																		

Description

Plenum box for slot diffuser-top entry is designed to ensure equal distribution of air across the supply diffusers.

The plenum box is supplied with acoustic lining to reduce noise generated inside the duct due to airflow turbulence, during supply, before reaching the diffuser.

Construction

Frame Material:

HB12 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HB12 is offered with different thicknesses Ga. 24 (0.7 mm) up to Ga. 18 (1.2 mm) , other thicknesses are available upon request.

Liner Type and Thickness:

HB12 are supplied with various options, without lining, with Rubber foam or with 25mm thickness acoustic lining 48kg/m3 or 24kg/m3 density. The lining is fixed inside the plenum box with non-flammable adhesive, adhesive pin press-on head or welded pin press-on head fasteners. Other Liner type and thicknesses are available upon request.

Seam Type:

HB12 is offered with Small or large pittsburg or full welded.

Duct Thickness (mm)	0.55 to 1.0	1.0 to 1.5	> 1.5
Seam type	Small Pitts	Large Pitts	Welded

No. of Spigot:

HB12 is offered with one spigot inlet in the middle and with various number of Spigot inlets upon request.

Spigot Option:

HB12 is offered with Spigot inlet, Spin collar or with two types of optional spin damper, more detail please refer next pages.

Diffuser width:

HB12 is offered with different diffuser sizes starting from 40 mm up to 450mm.

Diffuser Width range (mm)	Corresponded to Diffuser No. of Slots
35 to 60	1
65 to 105	2
90 to 150	3
126 to 190	4
140 to 235	5
180 to 280	6
210 to 325	7
230 to 450	8

Spigot Diameter:

HB12 is offered with different spigot sizes start from 100mm to 450mm with step 50mm.

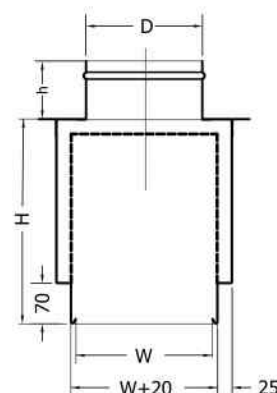
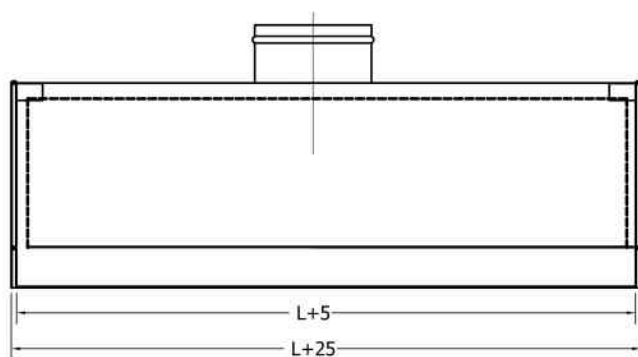
Plenum Height:

HB12 is offered with different heights upon request.

Spigot Height:

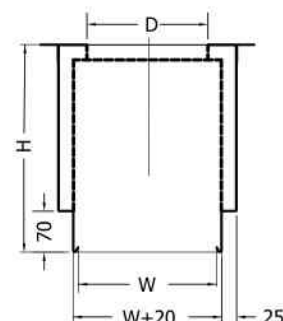
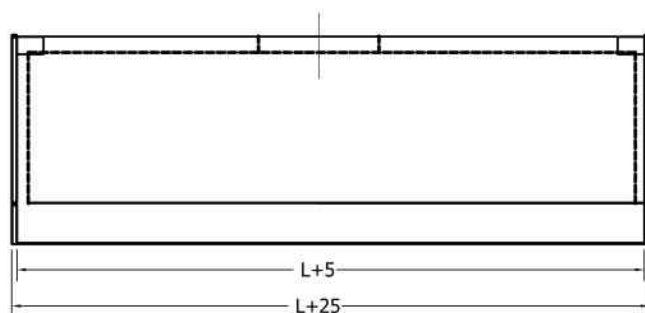
HB12 is offered with standard height h= 100 mm, and also available from 100 mm up to 300 mm

HB12- Plenum Box for Slot Diffuser with Spin Collar

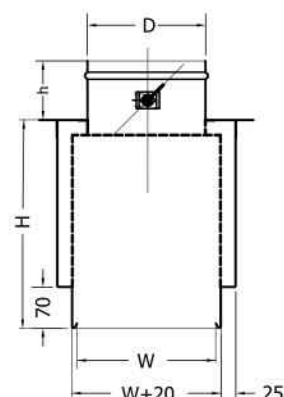
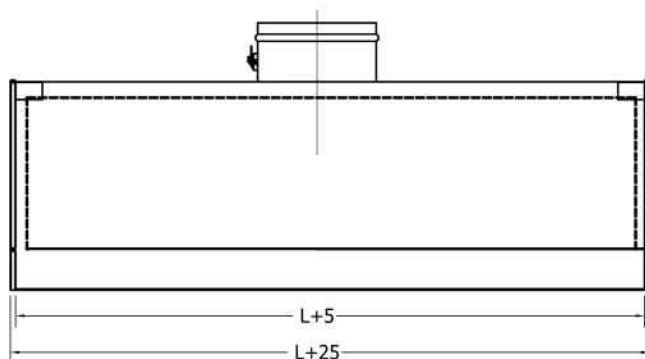


* h = 100 mm

HB12- Plenum Box for Slot Diffuser with spigot inlet.

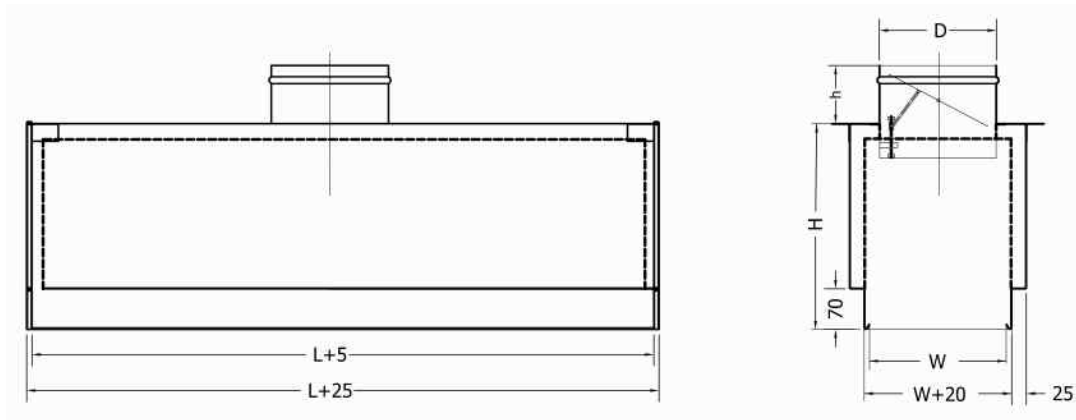


HB12- Plenum Box for Slot Diffuser with Optional Spin Damper (Ceiling Cotrol)



Optional spin damper adjusted through ceiling.

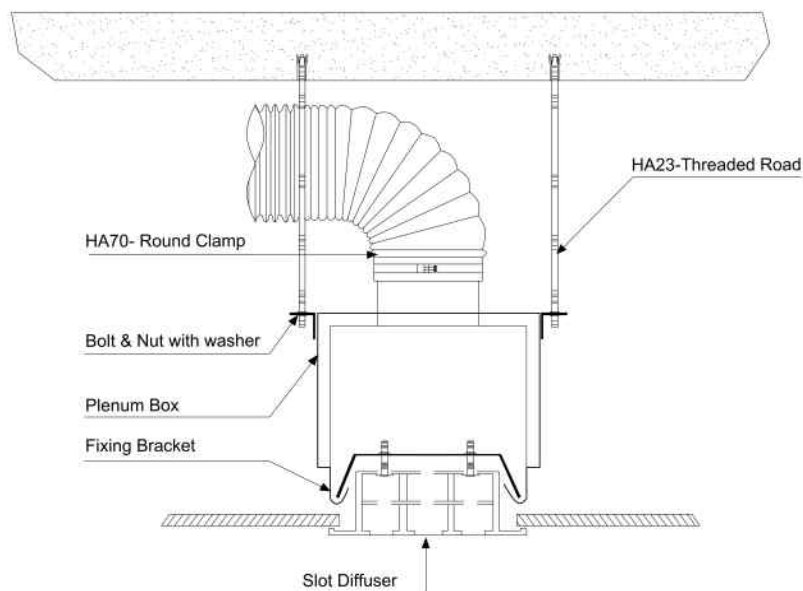
HB12- Plenum Box for Slot Diffuser with Optional Spin Damper (Face Control)



Optional spin damper adjusted from face of diffuser.

HB12- Plenum Box installation instructions

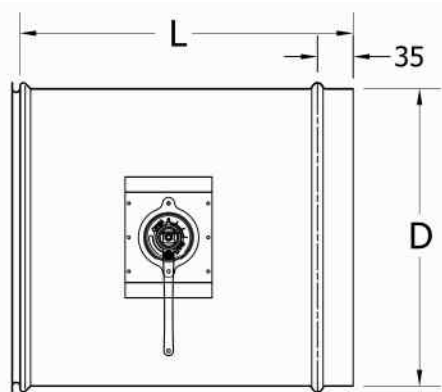
1. Align the centerline of the plenum box with the center of the ceiling opening, suspending it from its mounting holes with HA23-threaded rods.
2. Use nuts and washers above and below the mounting holes to set the plenum box height.
3. Check that the plenum box is leveled and aligned with the ceiling opening.



Attention:

- It is essential that all the plenums be installed in the ceiling void prior to the diffuser installation.
- Power tools are not recommended for this installation due to the risk of damage caused by the over-tightening of the hanging bracket screws.

HD30- Spin-In Damper



Ordering Code

Product Code : HD30 - M FTH BTH A - D x L

Material

Frame Thickness

Blade Thickness

Actuation

Diameter

Length

Description

Spin-in Damper is supplied with adjustable blade manually operated by a handle equipped with position indicator. It is suitable to control air volume before plenum box or at rectangular duct take-off.

Construction

Material:

HD30 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653 and Stainless steel 304 in accordance with ASTM A240.

Frame Thickness:

HD30 is offered with thicknesses Ga. 24 (0.7 mm) and Ga. 22 (0.8 mm) for galvanized steel, and with Ga.25 (0.6 mm) for Stainless steel.

Blade Thickness:

HD30 is offered with various Blade thicknesses -from Ga. 22 (0.8 mm) and Ga. 20 (1.0 mm).

Actuation:

HD30 is offered with Quadrant, Extended Shaft and Automatic actuation

Case Bearing:

HD30 is offered with Plastic bushing to ensure minimum leakage.

Size:

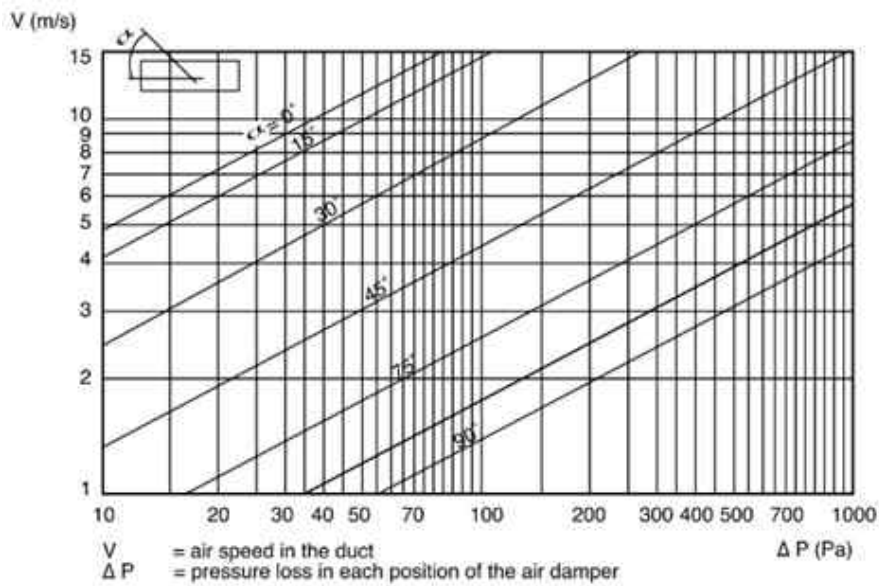
HD30 is offered with different spigot sizes.

Spin Damper Diameter (mm)	Recommended Length (mm)
100	150
150	150
200	200
250	250
300	300
350	300
400	300
450	300

Length:

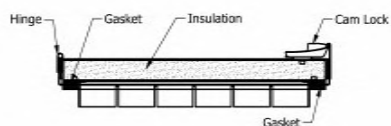
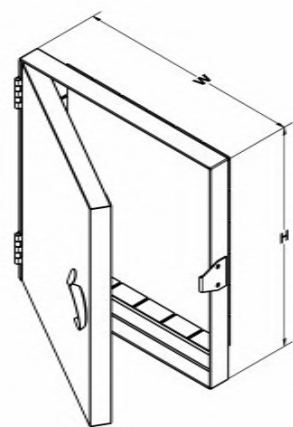
HD30 is offered with different lengths from 100 mm minimum up to 300 mm maximum.

HD30-Pressure Loss Data



- 1
- 2
- 3

HB21- Rec Access Door- Dove Tail - Hinged Type



Ordering Code

Product Code : HB21 - M LT P F - W x H

Material	M	LT	P	F	W	H
Liner Type & Thickness						
Pressure						
Finishing						
Width						
Height						

Description

Rectangular Access Door- Dove Tail - Hinged Type are designed to provide efficient and secure service access to critical areas in metal ducts for a wide range of commercial, industrial, institutional and residential applications. Offering economical, galvanized steel construction. Duct access doors enable easy access to dampers and other components in heating, air conditioning and other building ductwork.

Construction

Material:

HB21 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Black Steel in accordance with ASTM A366 supplied with primer paint, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 3003-H14 in accordance with ASTM B209.

Frame:

HB21 is offered with two different thicknesses - Ga. 22 (0.80mm) and Ga. 20 (1 mm) - based on agreed schedule.

Door:

HB21 is offered with double skin galvanized steel sheet thickness are 27 Ga. (0.50mm) and Ga. 18 (1.2 mm) - based on agreed schedule. And it is supplied with 25 mm thick fiber glass insulation

Hinge:

HB21 is offered with self-oiling butt hinges. Number of hinges changes relatively to access door dimensions and pressure.

Cam Lock:

HB21 is offered with one cam lock for size 350 mm. Number of cam lock changes relatively to access door dimensions and pressure.

Liner Type and Thickness:

HB21 is offered with wide range of liner types and thicknesses that matches with your duct system.

Sizes:

HB21 is offered with different dimensions

- Minimum size 6" W X 6"H (150X150) mm.
- Maximum size 24" W X 24"H (610X610) mm.

Finishing:

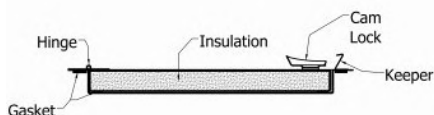
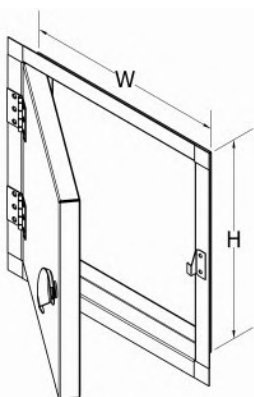
Access Door is offered with various paints.
*HB21 could be supplied with glass inspection
Customized sizes are available on request.

Standard Sizes configurations:

	Door Size Up to (mm)	No. of Hinge	No. of Locks	Metal Thickness (mm)	
				Frame	Door
Low Pressure (LP)- 500 Pa Static and Less	305X305	2	1-S	0.8	0.5
	406X508	2	2-S	0.8	0.7
	610X610	3	2-S	0.8	0.8
Medium Pressure (MP) 750 Pa Static	305X305	2	1-S, 1-T, 1-B	0.8	0.8
	406X508	2	1-S, 1-T, 1-B	1	1
	610X610	3	2-S, 1-T, 1-B	1	1
High Pressure (HP)- 1000 Pa to 2500 Pa	305X305	2	1-S, 1-T, 1-B	1	1
	406X508	3	2-S, 2-T, 2-B	1	1.2
	610X610	3	3-S, 3-T, 3-B	1	1.2

S = Side Opposite Hinges, T = Top, B = Bottom

HB22- Rec. Access Door - Flush - Hinged Type



Ordering Code

Product Code : HB22 - M LT P F - W x H

Material	
Liner Type & Thickness	
Pressure	
Finishing	
Width	
Height	

Description

Rectangular Access Door - Flush - Hinged Type are designed to provide efficient and secure service access to critical areas in metal ducts for a wide range of commercial, industrial, institutional and residential applications. Offering economical, galvanized steel construction. Duct access doors enable easy access to dampers and other components in heating, air conditioning and other building ductwork.

Construction

Material:

HB22 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Black Steel in accordance with ASTM A366 supplied with primer paint, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 3003-H14 in accordance with ASTM B209.

Frame:

HB22 is offered with two different thicknesses - Ga. 22 (0.80mm) and Ga. 20 (1 mm) - based on agreed schedule.

Door:

HB22 is offered with double skin galvanized steel sheet thickness are 27 Ga. (0.50mm) and Ga. 18 (1.2 mm) - based on agreed schedule. And it is supplied with 25 mm thick fiber glass insulation (Default).

Hinge:

HB22 is offered with self-oiling butt hinges.

Number of hinges changes relatively to access door dimensions and pressure.

Cam Lock:

HB22 is offered with one cam lock for size 350 mm

Number of cam lock changes relatively to access door dimensions and pressure.

Liner Type and Thickness:

HB22 is offered with wide range of liner types and thicknesses that matches with your duct system.

Sizes:

HB22 is offered with different dimensions

- Minimum size 6" W X 6"H (150X150) mm.
- Maximum size 24" W X 24"H (610X610) mm.

Finishing:

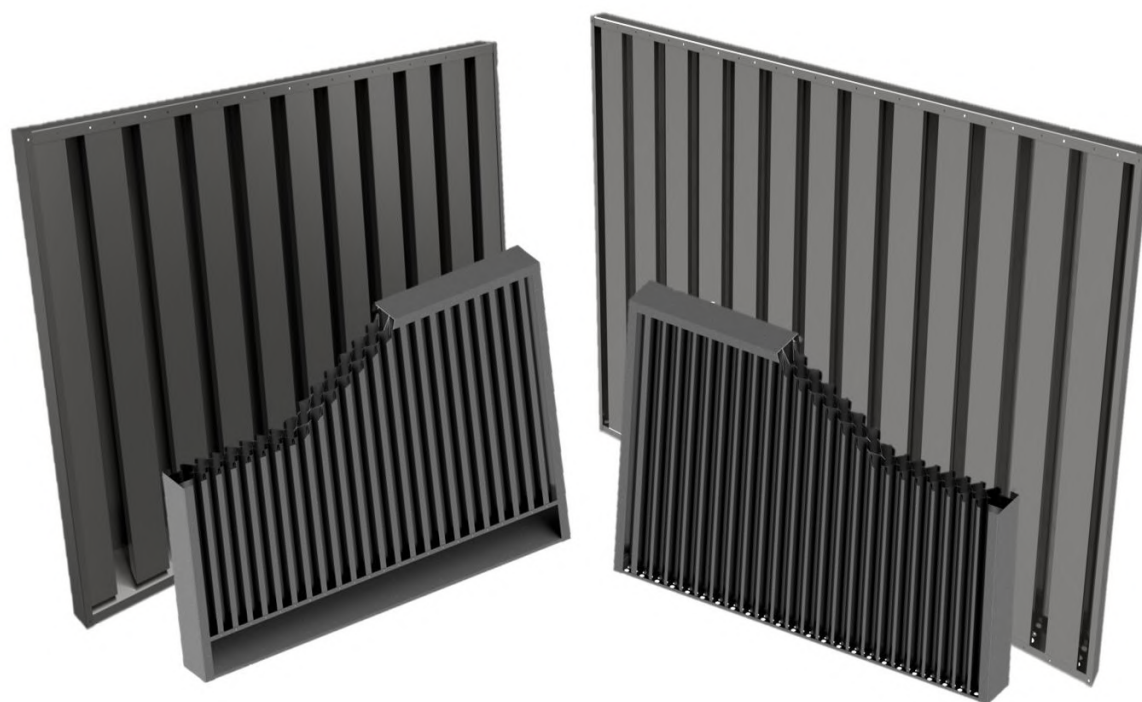
Access Door is offered with various paints.

*HB22 could be supplied with glass inspection
Customized sizes are available on request.

Standard Sizes configurations:

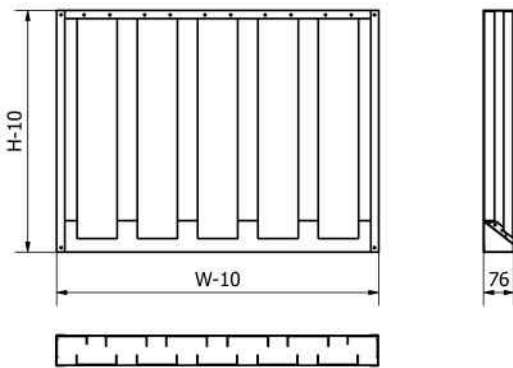
	Door Size Up to (mm)	No. of Hinge	No. of Locks	Metal Thickness (mm)	
				Frame	Door
Low Pressure (LP)- 500 Pa Static and Less	305X305	2	1-S	0.8	0.5
	406X508	2	2-S	0.8	0.7
	610X610	3	2-S	0.8	0.8
Medium Pressure (MP) 750 Pa Static	305X305	2	1-S, 1-T, 1-B	0.8	0.8
	406X508	2	1-S, 1-T, 1-B	1	1
	610X610	3	2-S, 1-T, 1-B	1	1
High Pressure (HP)- 1000 Pa to 2500 Pa	305X305	2	1-S, 1-T, 1-B	1	1
	406X508	3	2-S, 2-T, 2-B	1	1.2
	610X610	3	3-S, 3-T, 3-B	1	1.2

S = Side Opposite Hinges, T = Top, B = Bottom



Sand Trap Louver

HL01-Sand Trap Louver (Flush Mount Type)



Ordering Code

Product Code	:	HL01	-	M	FTH	BTH	MS	FO	F	-	W x H
Material											
Frame Thickness											
Blade Thickness											
Mesh Screen											
Filter Option											
Finish											
Width											
Height											

Description

Our Sand Trap Louver (STL) is the economically excellent choice as a pre-filter for fresh air intake to separate sand particles and prevent them from ingress the building or HVAC system; even at weather with high dust concentration. Our STL is corrosion resistant, self-cleaning and maintenance free.

Construction:

Material:

HL01 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 1050, 1100 and 3003-H14 in accordance with ASTM B209.

Frame:

HL01 is offered with range of thickness options starting from Ga. 20 (1.0 mm) to Ga. 16 (1.5 mm).

* Other thicknesses are available upon request.

Blades:

HL01 is offered with the same frame thickness or two lesser Ga. thickness than the frame thickness.

Mesh Screen:

HL01 is offered with two optional screens.

- Bird Screen with size 19x19x1 mm.
- Insect Screen with size 1x1x0.4 mm.

*Other sizes are available upon request.

Filter [optional]:

HL01 is offered with two aluminum washable filter sizes:

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Filter is offered with 5 access options:

- Window Access
- Right Access
- Left Access
- Top Access
- Bottom Access

Finish:

HL01 is offered with powder coating paints and packing as options.

Sizes:

HL01 is offered with many sizes:

- Minimum size 200 mm W x 155 mm H (8" W x 6" H).
- Maximum size 3020 mm W x 3020 mm H (119" W x 119" H).

* Other sizes are available upon request.

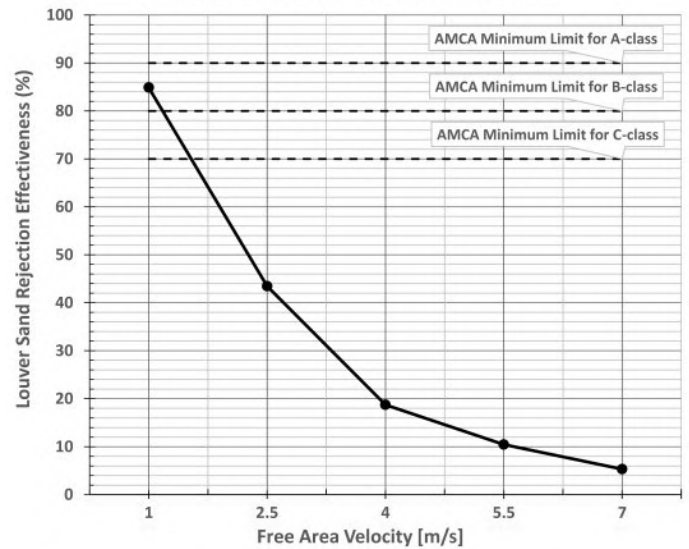
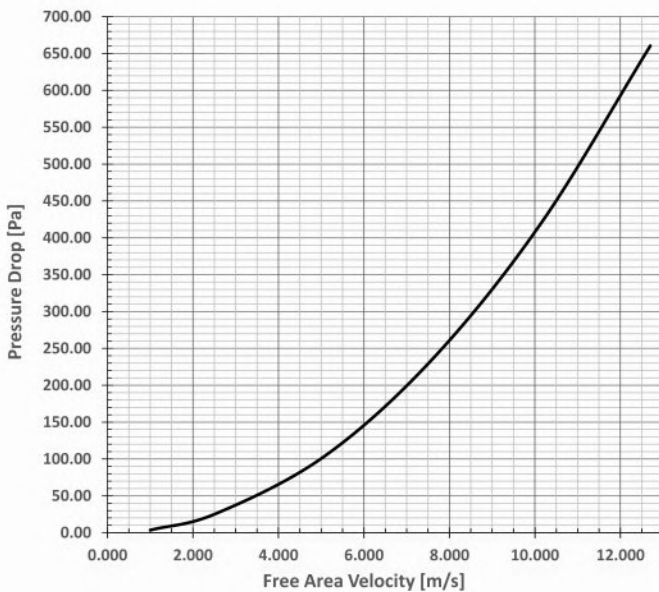
* Duct connection options are available upon request.

HL01-Performance Data

STL Flush Type - Free Area Table

		Free Opening Area (m ² [ft ²])																					
		Height < H > (mm [in])																					
		155 = [6]	200 = [8]	300 = [12]	400 = [16]	500 = [20]	600 = [24]	700 = [28]	800 = [32]	900 = [36]	1000 = [40]	1100 = [43]	1220 = [48]	1400 = [55]	1600 = [63]	1800 = [71]	2000 = [79]	2200 = [87]	2400 = [95]	2600 = [102]	2800 = [110]	3020 = [119]	
Width < W > (mm [in])	200 = [8]	0.005 [0.058]	0.009 [0.093]	0.016 [0.171]	0.023 [0.248]	0.030 [0.326]	0.038 [0.404]	0.045 [0.481]	0.052 [0.559]	0.059 [0.637]	0.066 [0.714]	0.074 [0.792]	0.082 [0.885]	0.095 [1.025]	0.110 [1.180]	0.124 [1.336]	0.139 [1.491]	0.153 [1.646]	0.167 [1.801]	0.182 [1.957]	0.196 [2.112]	0.212 [2.283]	
	300 = [12]	0.011 [0.116]	0.017 [0.186]	0.032 [0.342]	0.046 [0.497]	0.061 [0.652]	0.075 [0.808]	0.089 [0.963]	0.104 [1.118]	0.118 [1.273]	0.133 [1.429]	0.147 [1.584]	0.164 [1.770]	0.190 [2.050]	0.219 [2.361]	0.248 [2.671]	0.277 [2.982]	0.306 [3.292]	0.335 [3.603]	0.364 [3.914]	0.392 [4.224]	0.424 [4.566]	
	400 = [16]	0.011 [0.116]	0.017 [0.186]	0.032 [0.342]	0.046 [0.497]	0.061 [0.652]	0.075 [0.808]	0.089 [0.963]	0.104 [1.118]	0.118 [1.273]	0.133 [1.429]	0.147 [1.584]	0.164 [1.770]	0.190 [2.050]	0.219 [2.361]	0.248 [2.671]	0.277 [2.982]	0.306 [3.292]	0.335 [3.603]	0.364 [3.914]	0.392 [4.224]	0.424 [4.566]	
	500 = [20]	0.011 [0.116]	0.017 [0.186]	0.032 [0.342]	0.046 [0.497]	0.061 [0.652]	0.075 [0.808]	0.089 [0.963]	0.104 [1.118]	0.118 [1.273]	0.133 [1.429]	0.147 [1.584]	0.164 [1.770]	0.190 [2.050]	0.219 [2.361]	0.248 [2.671]	0.277 [2.982]	0.306 [3.292]	0.335 [3.603]	0.364 [3.914]	0.392 [4.224]	0.424 [4.566]	
	600 = [24]	0.016 [0.175]	0.026 [0.280]	0.048 [0.512]	0.069 [0.745]	0.091 [0.978]	0.113 [1.211]	0.134 [1.444]	0.156 [1.677]	0.177 [1.910]	0.199 [2.143]	0.221 [2.376]	0.247 [2.656]	0.286 [3.075]	0.329 [3.541]	0.372 [4.007]	0.416 [4.473]	0.459 [4.939]	0.502 [5.404]	0.545 [5.870]	0.589 [6.336]	0.636 [6.849]	
	700 = [28]	0.016 [0.175]	0.026 [0.280]	0.048 [0.512]	0.069 [0.745]	0.091 [0.978]	0.113 [1.211]	0.134 [1.444]	0.156 [1.677]	0.177 [1.910]	0.199 [2.143]	0.221 [2.376]	0.247 [2.656]	0.286 [3.075]	0.329 [3.541]	0.372 [4.007]	0.416 [4.473]	0.459 [4.939]	0.502 [5.404]	0.545 [5.870]	0.589 [6.336]	0.636 [6.849]	
	800 = [32]	0.016 [0.175]	0.026 [0.280]	0.048 [0.512]	0.069 [0.745]	0.091 [0.978]	0.113 [1.211]	0.134 [1.444]	0.156 [1.677]	0.177 [1.910]	0.199 [2.143]	0.221 [2.376]	0.247 [2.656]	0.286 [3.075]	0.329 [3.541]	0.372 [4.007]	0.416 [4.473]	0.459 [4.939]	0.502 [5.404]	0.545 [5.870]	0.589 [6.336]	0.636 [6.849]	
	900 = [36]	0.022 [0.233]	0.035 [0.373]	0.063 [0.683]	0.092 [0.994]	0.121 [1.305]	0.150 [1.615]	0.179 [1.926]	0.208 [2.236]	0.237 [2.547]	0.265 [2.858]	0.294 [3.168]	0.329 [3.541]	0.381 [4.100]	0.439 [4.721]	0.496 [5.342]	0.554 [5.963]	0.612 [6.585]	0.669 [7.206]	0.727 [7.827]	0.785 [8.448]	0.848 [9.132]	
	1000 = [40]	0.022 [0.233]	0.035 [0.373]	0.063 [0.683]	0.092 [0.994]	0.121 [1.305]	0.150 [1.615]	0.179 [1.926]	0.208 [2.236]	0.237 [2.547]	0.265 [2.858]	0.294 [3.168]	0.329 [3.541]	0.381 [4.100]	0.439 [4.721]	0.496 [5.342]	0.554 [5.963]	0.612 [6.585]	0.669 [7.206]	0.727 [7.827]	0.785 [8.448]	0.848 [9.132]	
	1100 = [43]	0.022 [0.233]	0.035 [0.373]	0.063 [0.683]	0.092 [0.994]	0.121 [1.305]	0.150 [1.615]	0.179 [1.926]	0.208 [2.236]	0.237 [2.547]	0.265 [2.858]	0.294 [3.168]	0.329 [3.541]	0.381 [4.100]	0.439 [4.721]	0.496 [5.342]	0.554 [5.963]	0.612 [6.585]	0.669 [7.206]	0.727 [7.827]	0.785 [8.448]	0.848 [9.132]	
	1220 = [48]	0.027 [0.291]	0.043 [0.466]	0.079 [0.854]	0.115 [1.242]	0.151 [1.631]	0.188 [2.019]	0.224 [2.407]	0.260 [2.795]	0.296 [3.184]	0.332 [3.572]	0.368 [3.960]	0.411 [4.426]	0.476 [5.125]	0.548 [5.901]	0.620 [6.678]	0.693 [7.454]	0.765 [8.231]	0.837 [9.007]	0.909 [9.784]	0.981 [10.560]	1.060 [11.414]	
	1400 = [55]	0.027 [0.291]	0.043 [0.466]	0.079 [0.854]	0.115 [1.242]	0.151 [1.631]	0.188 [2.019]	0.224 [2.407]	0.260 [2.795]	0.296 [3.184]	0.332 [3.572]	0.368 [3.960]	0.411 [4.426]	0.476 [5.125]	0.548 [5.901]	0.620 [6.678]	0.693 [7.454]	0.765 [8.231]	0.837 [9.007]	0.909 [9.784]	0.981 [10.560]	1.060 [11.414]	
	1600 = [63]	0.032 [0.349]	0.052 [0.559]	0.095 [1.025]	0.139 [1.491]	0.182 [1.957]	0.225 [2.423]	0.268 [2.889]	0.312 [3.354]	0.355 [3.820]	0.398 [4.286]	0.441 [4.752]	0.493 [5.311]	0.571 [6.150]	0.658 [7.082]	0.744 [8.013]	0.831 [8.945]	0.918 [9.877]	1.004 [10.809]	1.091 [11.741]	1.177 [12.672]	1.273 [13.697]	
	1800 = [71]	0.038 [0.408]	0.061 [0.652]	0.111 [1.196]	0.162 [1.739]	0.212 [2.283]	0.263 [2.826]	0.313 [3.370]	0.364 [3.914]	0.414 [4.457]	0.465 [5.001]	0.515 [5.544]	0.576 [6.196]	0.667 [7.175]	0.768 [8.262]	0.869 [9.349]	0.970 [10.436]	1.071 [11.523]	1.172 [12.610]	1.273 [13.697]	1.374 [14.784]	1.485 [15.980]	
	2000 = [79]	0.038 [0.408]	0.061 [0.652]	0.111 [1.196]	0.162 [1.739]	0.212 [2.283]	0.263 [2.826]	0.313 [3.370]	0.364 [3.914]	0.414 [4.457]	0.465 [5.001]	0.515 [5.544]	0.576 [6.196]	0.667 [7.175]	0.768 [8.262]	0.869 [9.349]	0.970 [10.436]	1.071 [11.523]	1.172 [12.610]	1.273 [13.697]	1.374 [14.784]	1.485 [15.980]	
	2200 = [87]	0.043 [0.466]	0.069 [0.745]	0.127 [1.367]	0.185 [1.988]	0.242 [2.609]	0.300 [3.230]	0.358 [3.851]	0.416 [4.473]	0.473 [5.094]	0.531 [5.715]	0.589 [6.336]	0.658 [7.082]	0.762 [8.200]	0.877 [9.442]	0.993 [10.685]	1.108 [11.927]	1.223 [13.169]	1.339 [14.412]	1.454 [15.654]	1.570 [16.897]	1.697 [18.263]	
	2400 = [95]	0.049 [0.524]	0.078 [0.839]	0.143 [1.537]	0.208 [2.236]	0.273 [2.935]	0.338 [3.634]	0.403 [4.333]	0.467 [5.032]	0.532 [5.731]	0.597 [6.429]	0.662 [7.128]	0.740 [7.967]	0.857 [9.225]	0.987 [10.622]	1.117 [12.020]	1.247 [13.418]	1.376 [14.816]	1.506 [16.213]	1.636 [17.611]	1.766 [19.009]	1.909 [20.546]	
	2600 = [102]	0.049 [0.524]	0.078 [0.839]	0.143 [1.537]	0.208 [2.236]	0.273 [2.935]	0.338 [3.634]	0.403 [4.333]	0.467 [5.032]	0.532 [5.731]	0.597 [6.429]	0.662 [7.128]	0.740 [7.967]	0.857 [9.225]	0.987 [10.622]	1.117 [12.020]	1.247 [13.418]	1.376 [14.816]	1.506 [16.213]	1.636 [17.611]	1.766 [19.009]	1.909 [20.546]	
	2800 = [110]	0.054 [0.582]	0.087 [0.932]	0.159 [1.708]	0.231 [2.485]	0.303 [3.261]	0.375 [4.038]	0.447 [4.814]	0.519 [5.591]	0.592 [6.367]	0.664 [7.144]	0.736 [7.920]	0.822 [8.852]	0.952 [10.250]	1.097 [11.803]	1.241 [13.356]	1.385 [14.909]	1.529 [16.462]	1.674 [18.015]	1.818 [19.568]	1.962 [21.121]	2.121 [22.829]	
3020 = [119]	0.060 [0.641]	0.095 [1.025]	0.175 [1.879]	0.254 [2.733]	0.333 [3.587]	0.413 [4.442]	0.492 [5.296]	0.571 [6.150]	0.651 [7.004]	0.730 [7.858]	0.809 [8.712]	0.905 [9.737]	1.047 [11.275]	1.206 [12.983]	1.365 [14.691]	1.524 [16.400]	1.682 [18.108]	1.841 [19.816]	2.000 [21.524]	2.158 [23.233]	2.333 [25.112]		

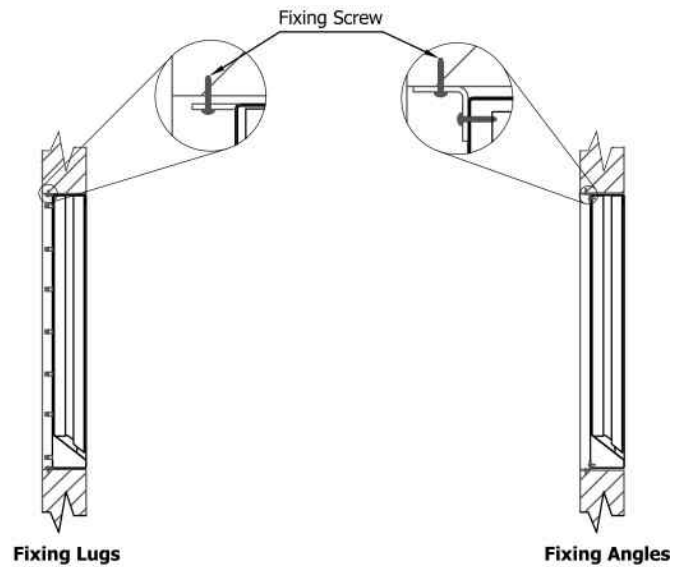
Sand Rejection Effectiveness Performance Chart
for Sand Particles Grade (76 - 699) µm



HL01- Sand Trap Louver installation instructions

HL01 can be fixed using welded lugs or angle bars from inside as shown below, according to the following instructions:

1. Align the louver neck to the mounting hole.
2. Use fixing screws to attach the louver to the wall
3. Add the necessary sealant to the Sand trap louver.



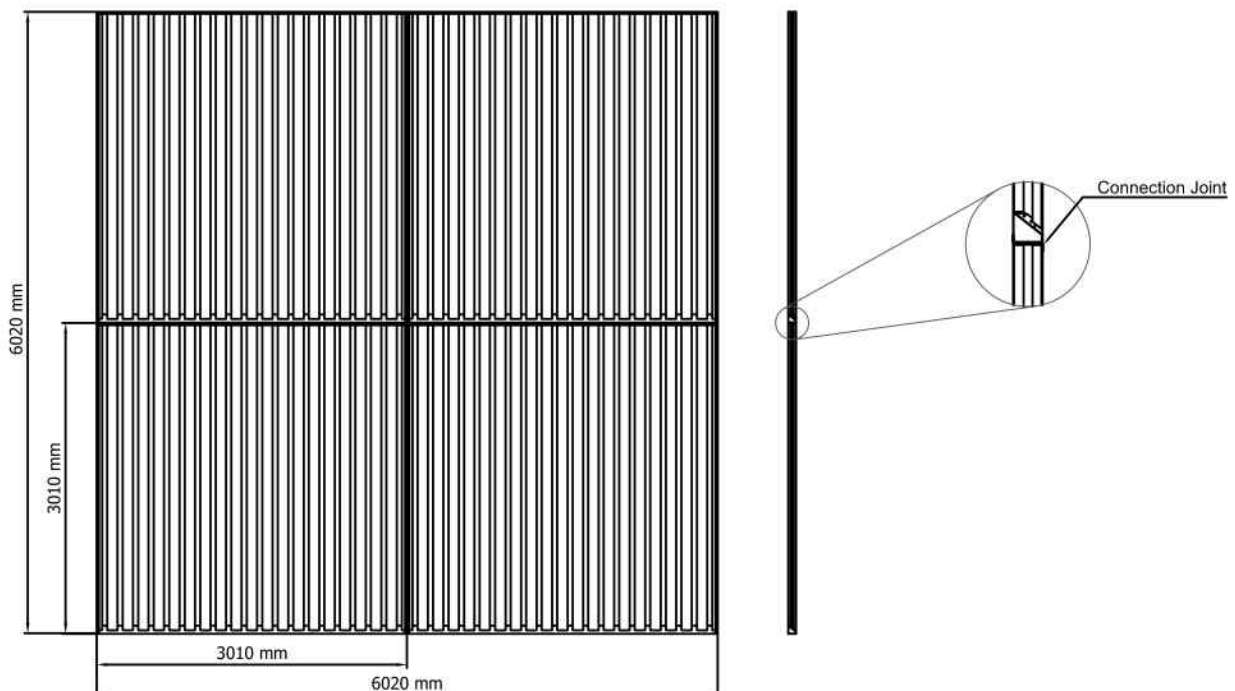
Attention:

- It is essential that all the louver be installed to the wall void prior to the filter installation.
- Power tools with 100 mm long shank screw driver is necessary to facilitate installation.

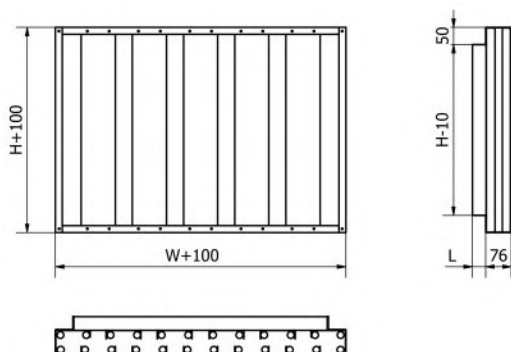
HL01-Multi Section Configuration

HL01 is offered with Multi Section Configuration for widths greater than 3020 mm and for heights greater than 3020 mm.

Example of multi section configuration dimensions.



HL02-Sand Trap Louver (Surface Mount Type)



Ordering Code

Product Code :	HL02	- M	FTH	BTH	MS	FO	F	- W x H
Material								
Frame Thickness								
Blade Thickness								
Mesh Screen								
Filter Option								
Finish								
Width								
Height								

Description

Our Sand Trap Louver (STL) is the economically excellent choice as a pre-filter for fresh air intake to separate sand particles and prevent them from ingress the building or HVAC system; even at weather with high dust concentration. Our STL is corrosion resistant, self-cleaning and maintenance free.

Construction:

Material:

HL02 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 1050, 1100 and 3003-H14 in accordance with ASTM B209.

Frame:

HL02 is offered with range of thickness options starting from Ga. 20 (1.0 mm) to Ga. 16 (1.5 mm).

* Other thicknesses are available upon request.

Blades:

HL02 is offered with the same frame thickness or two lesser Ga. thickness than the frame thickness.

Mesh Screen:

HL02 is offered with two optional screens

- Bird Screen with size 19x19x1 mm.
- Insect Screen with size 1x1x0.4 mm.

*Other sizes are available upon request.

Filter [optional]:

HL02 is offered with two aluminum washable filter sizes:

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Filter is offered with 5 access options:

- Window Access
- Right Access
- Left Access
- Top Access
- Bottom Access

Finish:

HL02 is offered with powder coating paints and packing as options.

Sizes:

HL02 is offered with any size between the following sizes:

- Minimum size 200 mm W x 155 mm H (8" W x 6" H).
- Maximum size 3020 mm W x 3020 mm H (119" W x 119" H).

* Other sizes are available upon request.

Neck length (L):

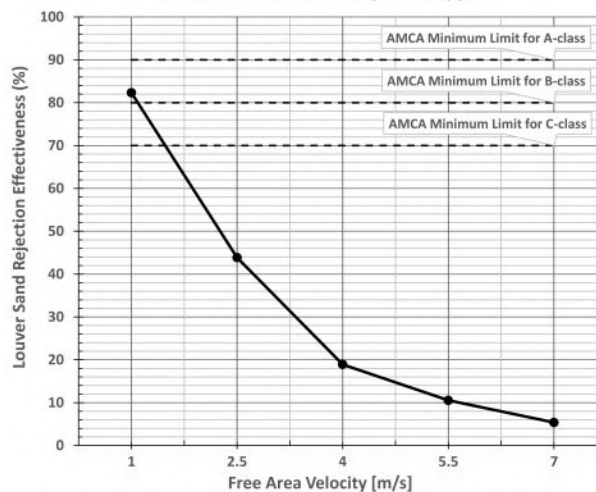
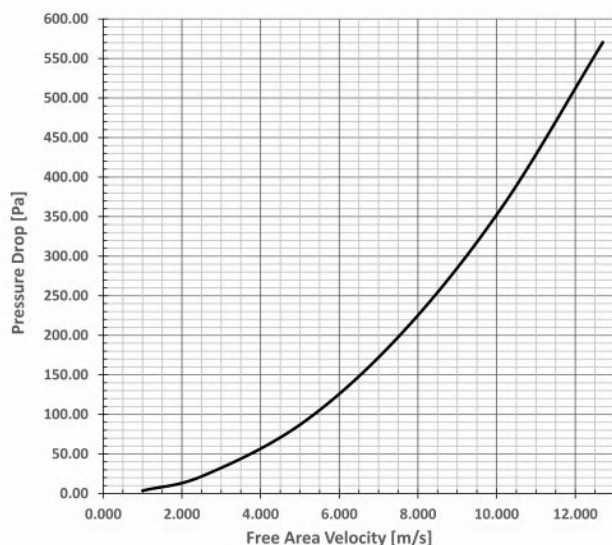
HL02 is offered with neck length 50 mm as default, and with 100 mm when using filter.

* Duct connection options are available upon request.

HL02-Performance Data

STL Surface Mount Type - Free Area Table

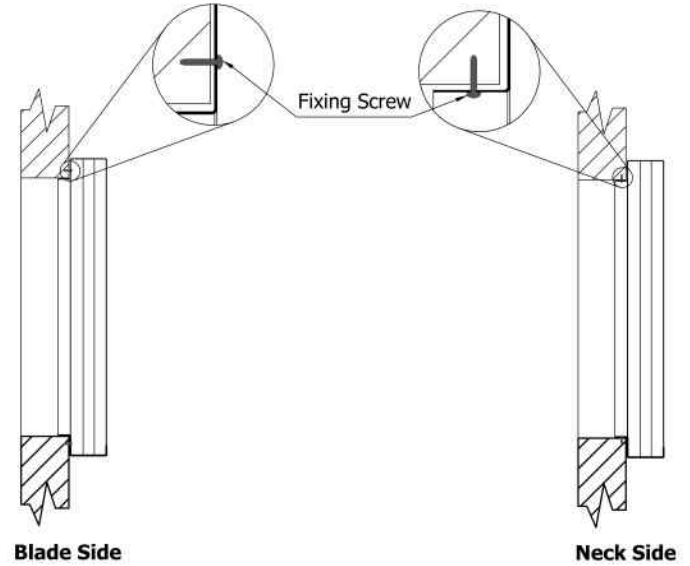
		Free Opening Area (m ² (ft ²))																				
		Height < H > (mm (in))																				
		155 = [6]	200 = [8]	300 = [12]	400 = [16]	500 = [20]	600 = [24]	700 = [28]	800 = [32]	900 = [36]	1000 = [40]	1100 = [43]	1220 = [48]	1400 = [55]	1600 = [63]	1800 = [71]	2000 = [79]	2200 = [87]	2400 = [95]	2600 = [102]	2800 = [110]	3020 = [119]
Width < W > (mm (in))	200 = [8]	0.037 [0.396]	0.043 [0.466]	0.058 [0.621]	0.072 [0.776]	0.087 [0.932]	0.101 [1.087]	0.115 [1.242]	0.130 [1.398]	0.144 [1.553]	0.159 [1.708]	0.173 [1.864]	0.190 [2.050]	0.216 [2.329]	0.245 [2.640]	0.274 [2.951]	0.303 [3.261]	0.332 [3.572]	0.361 [3.882]	0.390 [4.193]	0.418 [4.504]	0.450 [4.845]
	300 = [12]	0.037 [0.396]	0.043 [0.466]	0.058 [0.621]	0.072 [0.776]	0.087 [0.932]	0.101 [1.087]	0.115 [1.242]	0.130 [1.398]	0.144 [1.553]	0.159 [1.708]	0.173 [1.864]	0.190 [2.050]	0.216 [2.329]	0.245 [2.640]	0.274 [2.951]	0.303 [3.261]	0.332 [3.572]	0.361 [3.882]	0.390 [4.193]	0.418 [4.504]	0.450 [4.845]
	400 = [16]	0.037 [0.396]	0.043 [0.466]	0.058 [0.621]	0.072 [0.776]	0.087 [0.932]	0.101 [1.087]	0.115 [1.242]	0.130 [1.398]	0.144 [1.553]	0.159 [1.708]	0.173 [1.864]	0.190 [2.050]	0.216 [2.329]	0.245 [2.640]	0.274 [2.951]	0.303 [3.261]	0.332 [3.572]	0.361 [3.882]	0.390 [4.193]	0.418 [4.504]	0.450 [4.845]
	500 = [20]	0.055 [0.594]	0.065 [0.699]	0.087 [0.932]	0.108 [1.165]	0.130 [1.398]	0.151 [1.631]	0.173 [1.864]	0.195 [2.097]	0.216 [2.329]	0.238 [2.562]	0.260 [2.795]	0.286 [3.075]	0.325 [3.494]	0.368 [3.960]	0.411 [4.426]	0.454 [4.892]	0.498 [5.358]	0.541 [5.824]	0.584 [6.290]	0.628 [6.756]	0.675 [7.268]
	600 = [24]	0.055 [0.594]	0.065 [0.699]	0.087 [0.932]	0.108 [1.165]	0.130 [1.398]	0.151 [1.631]	0.173 [1.864]	0.195 [2.097]	0.216 [2.329]	0.238 [2.562]	0.260 [2.795]	0.286 [3.075]	0.325 [3.494]	0.368 [3.960]	0.411 [4.426]	0.454 [4.892]	0.498 [5.358]	0.541 [5.824]	0.584 [6.290]	0.628 [6.756]	0.675 [7.268]
	700 = [28]	0.055 [0.594]	0.065 [0.699]	0.087 [0.932]	0.108 [1.165]	0.130 [1.398]	0.151 [1.631]	0.173 [1.864]	0.195 [2.097]	0.216 [2.329]	0.238 [2.562]	0.260 [2.795]	0.286 [3.075]	0.325 [3.494]	0.368 [3.960]	0.411 [4.426]	0.454 [4.892]	0.498 [5.358]	0.541 [5.824]	0.584 [6.290]	0.628 [6.756]	0.675 [7.268]
	800 = [32]	0.074 [0.792]	0.087 [0.932]	0.115 [1.242]	0.144 [1.553]	0.173 [1.864]	0.202 [2.174]	0.231 [2.485]	0.260 [2.795]	0.289 [3.106]	0.317 [3.417]	0.346 [3.727]	0.381 [4.100]	0.433 [4.659]	0.491 [5.280]	0.548 [5.901]	0.606 [6.523]	0.664 [7.144]	0.721 [7.765]	0.779 [8.386]	0.837 [9.007]	0.900 [9.691]
	900 = [36]	0.074 [0.792]	0.087 [0.932]	0.115 [1.242]	0.144 [1.553]	0.173 [1.864]	0.202 [2.174]	0.231 [2.485]	0.260 [2.795]	0.289 [3.106]	0.317 [3.417]	0.346 [3.727]	0.381 [4.100]	0.433 [4.659]	0.491 [5.280]	0.548 [5.901]	0.606 [6.523]	0.664 [7.144]	0.721 [7.765]	0.779 [8.386]	0.837 [9.007]	0.900 [9.691]
	1000 = [40]	0.074 [0.792]	0.087 [0.932]	0.115 [1.242]	0.144 [1.553]	0.173 [1.864]	0.202 [2.174]	0.231 [2.485]	0.260 [2.795]	0.289 [3.106]	0.317 [3.417]	0.346 [3.727]	0.381 [4.100]	0.433 [4.659]	0.491 [5.280]	0.548 [5.901]	0.606 [6.523]	0.664 [7.144]	0.721 [7.765]	0.779 [8.386]	0.837 [9.007]	0.900 [9.691]
	1100 = [43]	0.092 [0.990]	0.108 [1.165]	0.144 [1.553]	0.180 [1.941]	0.216 [2.329]	0.252 [2.718]	0.289 [3.106]	0.325 [3.494]	0.361 [3.882]	0.397 [4.271]	0.433 [4.659]	0.476 [5.125]	0.541 [5.824]	0.613 [6.600]	0.685 [7.377]	0.757 [8.153]	0.830 [8.930]	0.902 [9.706]	0.974 [10.483]	1.046 [11.259]	1.125 [12.113]
	1220 = [48]	0.092 [0.990]	0.108 [1.165]	0.144 [1.553]	0.180 [1.941]	0.216 [2.329]	0.252 [2.718]	0.289 [3.106]	0.325 [3.494]	0.361 [3.882]	0.397 [4.271]	0.433 [4.659]	0.476 [5.125]	0.541 [5.824]	0.613 [6.600]	0.685 [7.377]	0.757 [8.153]	0.830 [8.930]	0.902 [9.706]	0.974 [10.483]	1.046 [11.259]	1.125 [12.113]
1400 = [55]	0.110 [1.188]	0.130 [1.398]	0.173 [1.864]	0.216 [2.329]	0.260 [2.795]	0.303 [3.261]	0.346 [3.727]	0.390 [4.193]	0.433 [4.659]	0.476 [5.125]	0.519 [5.591]	0.571 [6.150]	0.649 [6.988]	0.736 [7.920]	0.822 [8.852]	0.909 [9.784]	0.996 [10.716]	1.082 [11.647]	1.169 [12.579]	1.255 [13.511]	1.350 [14.536]	
1600 = [63]	0.110 [1.188]	0.130 [1.398]	0.173 [1.864]	0.216 [2.329]	0.260 [2.795]	0.303 [3.261]	0.346 [3.727]	0.390 [4.193]	0.433 [4.659]	0.476 [5.125]	0.519 [5.591]	0.571 [6.150]	0.649 [6.988]	0.736 [7.920]	0.822 [8.852]	0.909 [9.784]	0.996 [10.716]	1.082 [11.647]	1.169 [12.579]	1.255 [13.511]	1.350 [14.536]	
1800 = [71]	0.129 [1.386]	0.151 [1.631]	0.202 [2.174]	0.252 [2.718]	0.303 [3.261]	0.353 [3.805]	0.404 [4.348]	0.454 [4.892]	0.505 [5.435]	0.555 [5.979]	0.606 [6.523]	0.667 [7.175]	0.757 [8.153]	0.858 [9.240]	0.959 [10.327]	1.060 [11.414]	1.161 [12.502]	1.262 [13.589]	1.363 [14.676]	1.464 [15.763]	1.576 [16.959]	
2000 = [79]	0.147 [1.584]	0.173 [1.864]	0.231 [2.485]	0.289 [3.106]	0.346 [3.727]	0.404 [4.348]	0.462 [4.970]	0.519 [5.591]	0.577 [6.212]	0.635 [6.833]	0.693 [7.454]	0.762 [8.200]	0.866 [9.318]	0.981 [10.560]	1.097 [11.803]	1.212 [13.045]	1.327 [14.288]	1.443 [15.530]	1.558 [16.772]	1.674 [18.015]	1.801 [19.381]	
2200 = [87]	0.147 [1.584]	0.173 [1.864]	0.231 [2.485]	0.289 [3.106]	0.346 [3.727]	0.404 [4.348]	0.462 [4.970]	0.519 [5.591]	0.577 [6.212]	0.635 [6.833]	0.693 [7.454]	0.762 [8.200]	0.866 [9.318]	0.981 [10.560]	1.097 [11.803]	1.212 [13.045]	1.327 [14.288]	1.443 [15.530]	1.558 [16.772]	1.674 [18.015]	1.801 [19.381]	
2400 = [95]	0.166 [1.782]	0.195 [2.097]	0.260 [2.795]	0.325 [3.494]	0.390 [4.193]	0.454 [4.892]	0.519 [5.591]	0.584 [6.290]	0.649 [6.988]	0.714 [7.687]	0.779 [8.386]	0.857 [9.225]	0.974 [10.483]	1.104 [11.880]	1.234 [13.278]	1.363 [14.676]	1.493 [16.073]	1.623 [17.471]	1.753 [18.869]	1.883 [20.267]	2.026 [21.804]	
2600 = [102]	0.184 [1.980]	0.216 [2.329]	0.289 [3.106]	0.361 [3.882]	0.433 [4.659]	0.505 [5.435]	0.577 [6.212]	0.649 [6.988]	0.721 [7.765]	0.794 [8.541]	0.866 [9.318]	0.952 [10.250]	1.082 [11.647]	1.226 [13.200]	1.371 [14.753]	1.515 [16.306]	1.659 [17.859]	1.803 [19.412]	1.948 [20.965]	2.092 [22.518]	2.251 [24.227]	
2800 = [110]	0.184 [1.980]	0.216 [2.329]	0.289 [3.106]	0.361 [3.882]	0.433 [4.659]	0.505 [5.435]	0.577 [6.212]	0.649 [6.988]	0.721 [7.765]	0.794 [8.541]	0.866 [9.318]	0.952 [10.250]	1.082 [11.647]	1.226 [13.200]	1.371 [14.753]	1.515 [16.306]	1.659 [17.859]	1.803 [19.412]	1.948 [20.965]	2.092 [22.518]	2.251 [24.227]	
3020 = [119]	0.202 [2.178]	0.238 [2.562]	0.317 [3.417]	0.397 [4.271]	0.476 [5.125]	0.555 [5.979]	0.635 [6.833]	0.714 [7.687]	0.794 [8.541]	0.873 [9.396]	0.952 [10.250]	1.047 [11.275]	1.190 [12.812]	1.349 [14.520]	1.508 [16.229]	1.666 [17.937]	1.825 [19.645]	1.984 [21.354]	2.143 [23.062]	2.301 [24.770]	2.476 [26.649]	

Sand Rejection Effectiveness Performance Chart
for Sand Particles Grade (76 - 699) μ m

HL02- Sand Trap Louver installation instructions

HL02 can be fixed from both top and bottom sides as shown below, according to the following instructions:

1. Align the louver neck to the mounting hole.
2. Use fixing screws to attach the louver to the wall
3. Add the necessary sealant to the Sand trap louver.



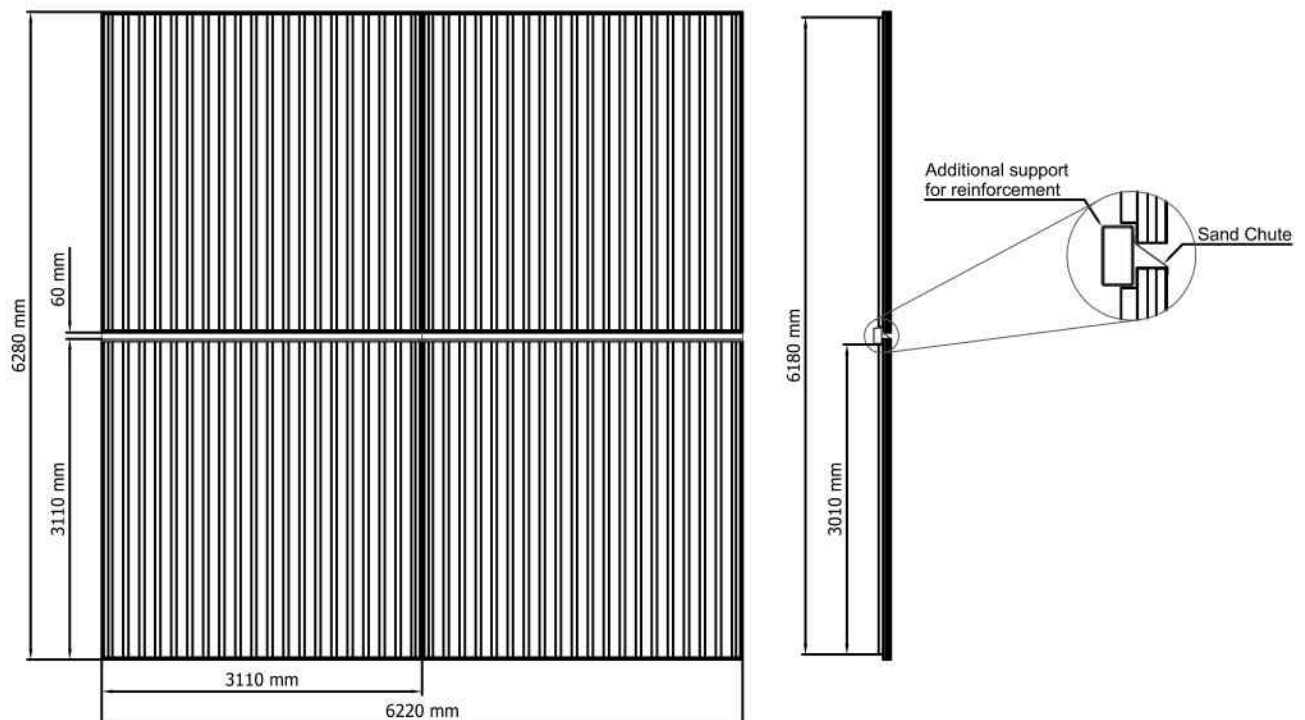
Attention:

- It is essential that all the louver be installed to the wall void prior to the filter installation
- Power tools with 100 mm long shank screw driver is necessary to facilitate installation.

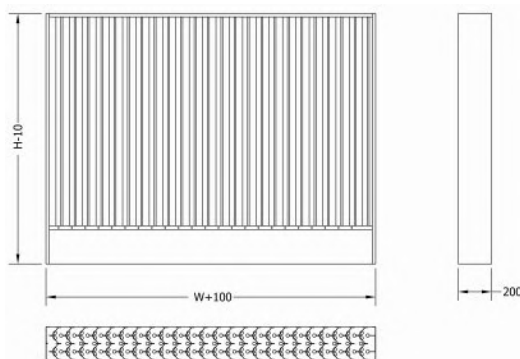
HL02-Multi Section Configuration

HL02 is offered with Multi Section Configuration for widths greater than 3020 mm and for heights greater than 3020 mm.

Example of multi section configuration dimensions



HL03-Sand Trap Louver-High Efficient (Flush Mount Type)



Ordering Code

Product Code	: HL03	- M	FTH	BTH	MS	FO	F - W x H
Material							
Frame Thickness							
Blade Thickness							
Mesh Screen							
Filter Option							
Finish							
Width							
Height							

Description

High efficient Sand Trap Louver (STL) is the excellent choice as a pre-filter for fresh air intake to separate sand particles and prevent them from ingress the building or HVAC system; even at weather with high dust concentration. Our STL is corrosion resistant, self-cleaning and maintenance free.

Construction:

Material:

HL03 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 1050, 1100 and 3003-H14 in accordance with ASTM B209.

Frame:

HL03 is offered with range of thickness options starting from Ga. 20 (1.0 mm) to Ga. 16 (1.5 mm).

* Other thicknesses are available upon request.

Blades:

HL03 is offered with the same frame thickness or two lesser Ga. thickness than the frame thickness.

Mesh Screen:

HL03 is offered with two optional screens.

- Bird Screen with size 19x19x1 mm.
- Insect Screen with size 1x1x0.4 mm.

*Other sizes are available upon request.

Filter [optional]:

HL03 is offered with two aluminum washable filter sizes:

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Filter is offered with 5 access options:

- Window Access
- Right Access
- Left Access
- Top Access
- Bottom Access

Finish:

HL03 is offered with powder coating paints and packing as options.

Sizes:

HL03 is offered with many sizes:

- Minimum size 200 mm W x 300 mm H (8" W x 12" H).
- Maximum size 3020 mm W x 3020 mm H (119" W x 119" H).

* Other sizes are available upon request.

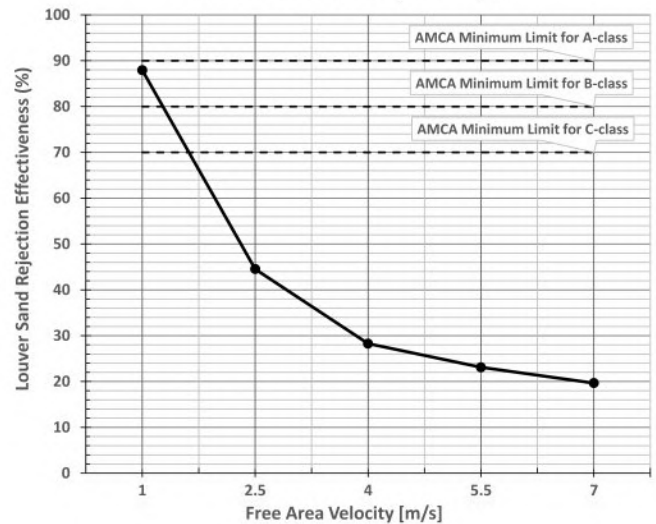
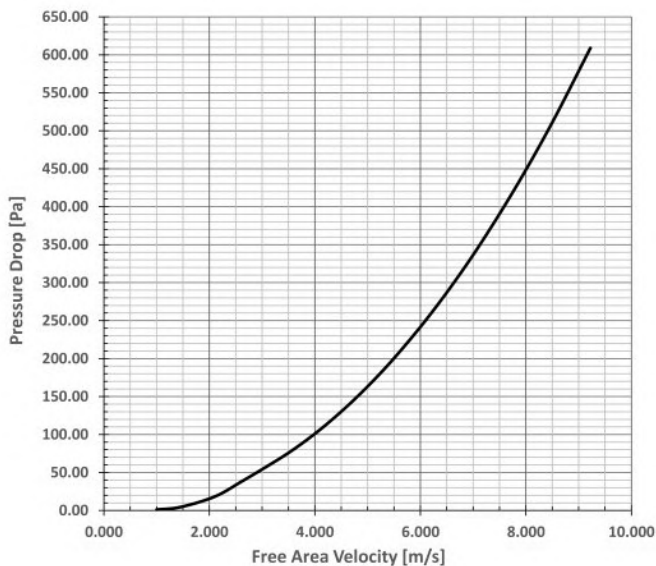
* Duct connection options are available upon request.

HL03-Performance Data

STL Flush Type - Free Area Table

		Free Opening Area (m ² [ft ²])																			
		Height < H > (mm [in])																			
		300 = [12]	400 = [16]	500 = [20]	600 = [24]	700 = [28]	800 = [32]	900 = [36]	1000 = [40]	1100 = [43]	1220 = [48]	1400 = [55]	1600 = [63]	1800 = [71]	2000 = [79]	2200 = [87]	2400 = [95]	2600 = [102]	2800 = [110]	3020 = [119]	
Width < W > (mm [in])	200 = [8]	0.014 [0.150]	0.023 [0.250]	0.033 [0.350]	0.042 [0.450]	0.051 [0.551]	0.060 [0.651]	0.070 [0.751]	0.079 [0.851]	0.088 [0.951]	0.100 [1.071]	0.116 [1.251]	0.135 [1.452]	0.153 [1.652]	0.172 [1.852]	0.191 [2.052]	0.209 [2.252]	0.228 [2.453]	0.246 [2.653]	0.267 [2.873]	
	300 = [12]	0.026 [0.276]	0.043 [0.460]	0.060 [0.644]	0.077 [0.828]	0.094 [1.012]	0.111 [1.196]	0.128 [1.380]	0.145 [1.565]	0.162 [1.749]	0.183 [1.969]	0.214 [2.301]	0.248 [2.669]	0.282 [3.037]	0.316 [3.405]	0.351 [3.773]	0.385 [4.141]	0.419 [4.510]	0.453 [4.878]	0.491 [5.283]	
	400 = [16]	0.032 [0.339]	0.053 [0.565]	0.074 [0.791]	0.095 [1.017]	0.116 [1.243]	0.137 [1.469]	0.158 [1.695]	0.179 [1.921]	0.200 [2.147]	0.225 [2.419]	0.263 [2.826]	0.305 [3.278]	0.347 [3.730]	0.389 [4.182]	0.431 [4.634]	0.473 [5.086]	0.515 [5.538]	0.557 [5.990]	0.603 [6.487]	
	500 = [20]	0.043 [0.465]	0.072 [0.775]	0.101 [1.085]	0.130 [1.395]	0.158 [1.705]	0.187 [2.015]	0.216 [2.325]	0.245 [2.635]	0.274 [2.945]	0.308 [3.317]	0.360 [3.875]	0.418 [4.495]	0.475 [5.115]	0.533 [5.735]	0.590 [6.355]	0.648 [6.975]	0.706 [7.595]	0.763 [8.215]	0.827 [8.897]	
	600 = [24]	0.049 [0.528]	0.082 [0.880]	0.114 [1.232]	0.147 [1.584]	0.180 [1.936]	0.213 [2.288]	0.245 [2.640]	0.278 [2.992]	0.311 [3.344]	0.350 [3.766]	0.409 [4.400]	0.474 [5.104]	0.540 [5.808]	0.605 [6.512]	0.670 [7.216]	0.736 [7.920]	0.801 [8.624]	0.867 [9.327]	0.938 [10.102]	
	700 = [28]	0.061 [0.654]	0.101 [1.090]	0.142 [1.526]	0.182 [1.962]	0.223 [2.398]	0.263 [2.834]	0.304 [3.270]	0.344 [3.705]	0.385 [4.141]	0.433 [4.665]	0.506 [5.449]	0.587 [6.321]	0.668 [7.193]	0.749 [8.065]	0.830 [8.937]	0.911 [9.809]	0.992 [10.680]	1.073 [11.552]	1.162 [12.511]	
	800 = [32]	0.067 [0.717]	0.111 [1.195]	0.155 [1.673]	0.200 [2.151]	0.244 [2.629]	0.289 [3.106]	0.333 [3.584]	0.377 [4.062]	0.422 [4.540]	0.475 [5.114]	0.555 [5.974]	0.644 [6.930]	0.733 [7.886]	0.821 [8.841]	0.910 [9.797]	0.999 [10.753]	1.088 [11.709]	1.177 [12.665]	1.274 [13.716]	
	900 = [36]	0.078 [0.843]	0.131 [1.405]	0.183 [1.967]	0.235 [2.528]	0.287 [3.090]	0.339 [3.652]	0.392 [4.214]	0.444 [4.776]	0.496 [5.338]	0.559 [6.012]	0.653 [7.023]	0.757 [8.147]	0.861 [9.271]	0.966 [10.395]	1.070 [11.518]	1.175 [12.642]	1.279 [13.768]	1.383 [14.890]	1.498 [16.126]	
	1000 = [40]	0.084 [0.906]	0.140 [1.510]	0.196 [2.113]	0.252 [2.717]	0.309 [3.321]	0.365 [3.925]	0.421 [4.529]	0.477 [5.133]	0.533 [5.737]	0.600 [6.461]	0.701 [7.548]	0.813 [8.756]	0.926 [9.964]	1.038 [11.171]	1.150 [12.379]	1.262 [13.587]	1.374 [14.794]	1.487 [16.002]	1.610 [17.331]	
	1100 = [43]	0.096 [1.032]	0.160 [1.720]	0.224 [2.407]	0.288 [3.095]	0.351 [3.783]	0.415 [4.471]	0.479 [5.159]	0.543 [5.846]	0.607 [6.534]	0.684 [7.360]	0.799 [8.598]	0.927 [9.973]	1.054 [11.349]	1.182 [12.725]	1.310 [14.100]	1.438 [15.476]	1.566 [16.851]	1.693 [18.227]	1.834 [19.740]	
	1220 = [48]	0.108 [1.158]	0.179 [1.929]	0.251 [2.701]	0.323 [3.473]	0.394 [4.245]	0.466 [5.017]	0.538 [5.788]	0.609 [6.560]	0.681 [7.332]	0.767 [8.258]	0.896 [9.647]	1.040 [11.191]	1.183 [12.734]	1.326 [14.278]	1.470 [15.821]	1.613 [17.365]	1.757 [18.908]	1.900 [20.452]	2.058 [22.150]	
	1400 = [55]	0.119 [1.284]	0.199 [2.139]	0.278 [2.995]	0.358 [3.851]	0.437 [4.707]	0.517 [5.562]	0.596 [6.418]	0.676 [7.274]	0.755 [8.129]	0.851 [9.156]	0.994 [10.697]	1.153 [12.408]	1.312 [14.120]	1.471 [15.831]	1.630 [17.542]	1.789 [19.254]	1.948 [20.965]	2.107 [22.677]	2.282 [24.559]	
1600 = [63]	0.137 [1.473]	0.228 [2.454]	0.319 [3.436]	0.410 [4.418]	0.502 [5.399]	0.593 [6.381]	0.684 [7.363]	0.775 [8.344]	0.866 [9.326]	0.976 [10.504]	1.140 [12.271]	1.322 [14.234]	1.505 [16.198]	1.687 [18.161]	1.870 [20.124]	2.052 [22.088]	2.234 [24.051]	2.417 [26.014]	2.617 [28.174]		
1800 = [71]	0.154 [1.661]	0.257 [2.769]	0.360 [3.877]	0.463 [4.984]	0.566 [6.092]	0.669 [7.199]	0.772 [8.307]	0.875 [9.415]	0.978 [10.522]	1.101 [11.851]	1.286 [13.845]	1.492 [16.060]	1.698 [18.276]	1.904 [20.491]	2.109 [22.706]	2.315 [24.921]	2.521 [27.136]	2.727 [29.352]	2.953 [31.788]		
2000 = [79]	0.172 [1.850]	0.287 [3.084]	0.401 [4.317]	0.516 [5.551]	0.630 [6.784]	0.745 [8.018]	0.860 [9.252]	0.974 [10.485]	1.089 [11.719]	1.226 [13.199]	1.433 [15.419]	1.662 [17.886]	1.891 [20.353]	2.120 [22.821]	2.349 [25.288]	2.579 [27.755]	2.808 [30.222]	3.037 [32.689]	3.289 [35.403]		
2200 = [87]	0.189 [2.039]	0.316 [3.399]	0.442 [4.758]	0.568 [6.118]	0.695 [7.477]	0.821 [8.837]	0.947 [10.196]	1.074 [11.556]	1.200 [12.915]	1.351 [14.546]	1.579 [16.994]	1.831 [19.712]	2.084 [22.431]	2.337 [25.150]	2.589 [27.869]	2.842 [30.588]	3.094 [33.307]	3.347 [36.026]	3.625 [39.017]		
2400 = [95]	0.207 [2.228]	0.345 [3.714]	0.483 [5.199]	0.621 [6.684]	0.759 [8.170]	0.897 [9.655]	1.035 [11.141]	1.173 [12.626]	1.311 [14.111]	1.477 [15.894]	1.725 [18.568]	2.001 [21.539]	2.277 [24.509]	2.553 [27.480]	2.829 [30.451]	3.105 [33.422]	3.381 [36.393]	3.657 [39.364]	3.961 [42.632]		
2600 = [102]	0.225 [2.417]	0.374 [4.028]	0.524 [5.640]	0.674 [7.251]	0.823 [8.862]	0.973 [10.474]	1.123 [12.085]	1.272 [13.697]	1.422 [15.308]	1.602 [17.242]	1.871 [20.142]	2.171 [23.365]	2.470 [26.587]	2.769 [29.810]	3.069 [33.033]	3.368 [36.256]	3.668 [39.478]	3.967 [42.701]	4.296 [46.246]		
2800 = [110]	0.242 [2.606]	0.404 [4.343]	0.565 [6.081]	0.726 [7.818]	0.888 [9.555]	1.049 [11.292]	1.211 [13.030]	1.372 [14.767]	1.533 [16.504]	1.727 [18.589]	2.018 [21.716]	2.340 [25.191]	2.663 [28.665]	2.986 [32.140]	3.309 [35.615]	3.632 [39.089]	3.954 [42.564]	4.277 [46.038]	4.632 [49.860]		
3020 = [119]	0.266 [2.858]	0.443 [4.763]	0.620 [6.620]	0.797 [8.573]	0.974 [10.479]	1.151 [12.384]	1.328 [14.289]	1.505 [16.194]	1.682 [18.100]	1.894 [20.386]	2.213 [23.815]	2.567 [27.626]	2.921 [31.436]	3.275 [35.246]	3.629 [39.057]	3.983 [42.867]	4.337 [46.678]	4.691 [50.488]	5.080 [54.680]		

Sand Rejection Effectiveness Performance Chart
for Sand Particles Grade (76 - 699) µm



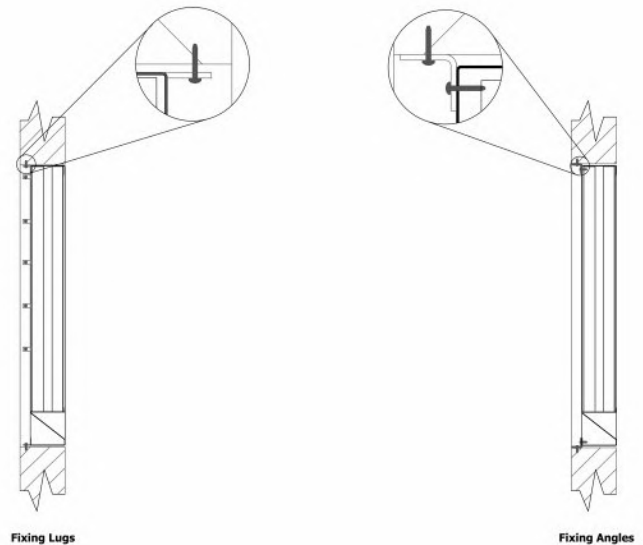
HL03- Sand Trap Louver installation instructions

HL03 can be fixed using welded lugs or angle bars from inside as shown below, according to the following instructions:

1. Align the louver neck to the mounting hole.
2. Use fixing screws to attach the louver to the wall
3. Add the necessary sealant to the Sand trap louver.

Attention:

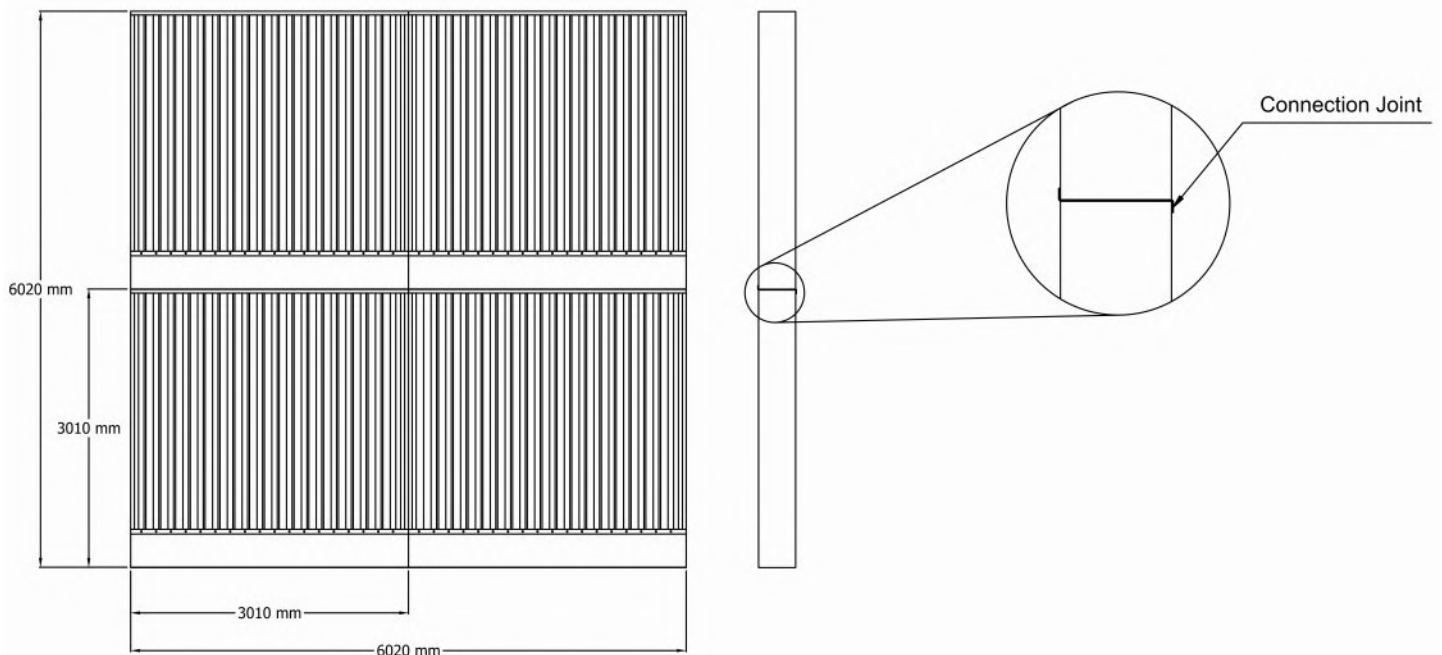
- It is essential that all the louver be installed to the wall void prior to the filter installation.
- Power tools with 100 mm long shank screw driver is necessary to facilitate installation.



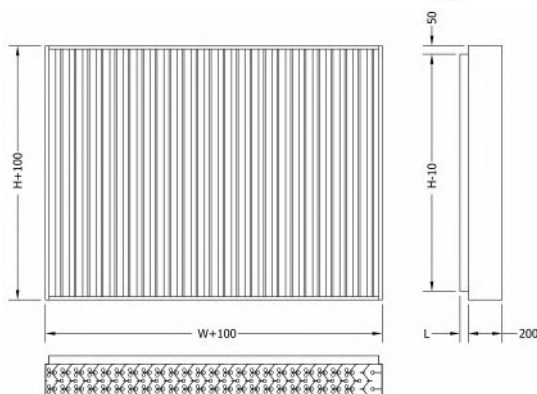
HL03-Multi Section Configuration

HL03 is offered with Multi Section Configuration for widths greater than 3020 mm and for heights greater than 3020 mm.

Example of multi section configuration dimensions.



HL04-Sand Trap Louver-High Efficient (Surface Mount Type)



Ordering Code

Product Code	: HL04	- M	FTH	BTH	MS	FO	F	- W x H
Material								
Frame Thickness								
Blade Thickness								
Mesh Screen								
Filter Option								
Finish								
Width								
Height								

Description

High Efficient Sand Trap Louver (STL) is the economically excellent choice as a pre-filter for fresh air intake to separate sand particles and prevent them from ingress the building or HVAC system; even at weather with high dust concentration. Our STL is corrosion resistant, self-cleaning and maintenance free.

Construction:

Material:

HL04 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 1050, 1100 and 3003-H14 in accordance with ASTM B209.

Frame:

HL04 is offered with range of thickness options starting from Ga. 20 (1.0 mm) to Ga. 16 (1.5 mm).

* Other thicknesses are available upon request.

Blades:

HL04 is offered with the same frame thickness or two lesser Ga. thickness than the frame thickness.

Mesh Screen:

HL04 is offered with two optional screens

- Bird Screen with size 19x19x1 mm.
- Insect Screen with size 1x1x0.4 mm.

*Other sizes are available upon request.

Filter [optional]:

HL04 is offered with two aluminum washable filter sizes:

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Filter is offered with 5 access options:

- Window Access
- Right Access
- Left Access
- Top Access
- Bottom Access

Finish:

HL04 is offered with powder coating paints and packing as options.

Sizes:

HL04 is offered with any size between the following sizes:

- Minimum size 200 mm W x 300 mm H (8" W x 12" H).
- Maximum size 3020 mm W x 3020 mm H (119" W x 119" H).

* Other sizes are available upon request.

Neck length (L):

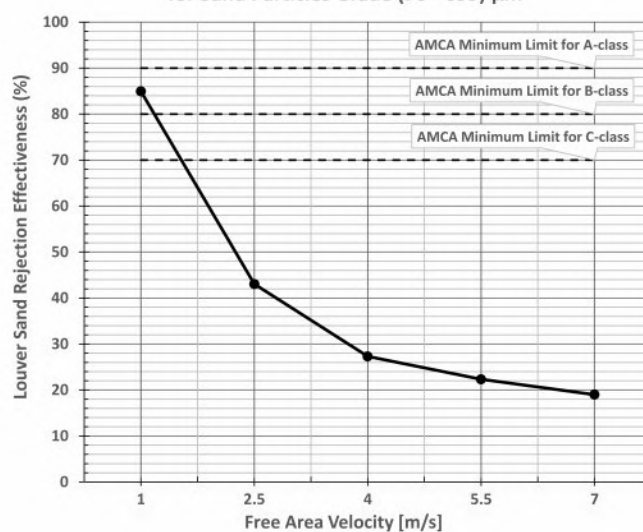
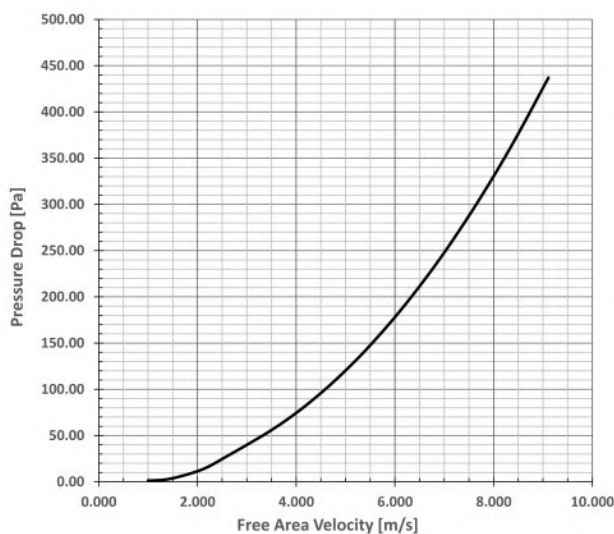
HL04 is offered with neck length 50 mm as default, and with 100 mm when using filter

* Duct connection options are available upon request.

HL04-Performance Data

STL Surface Mount Type - Free Area Table

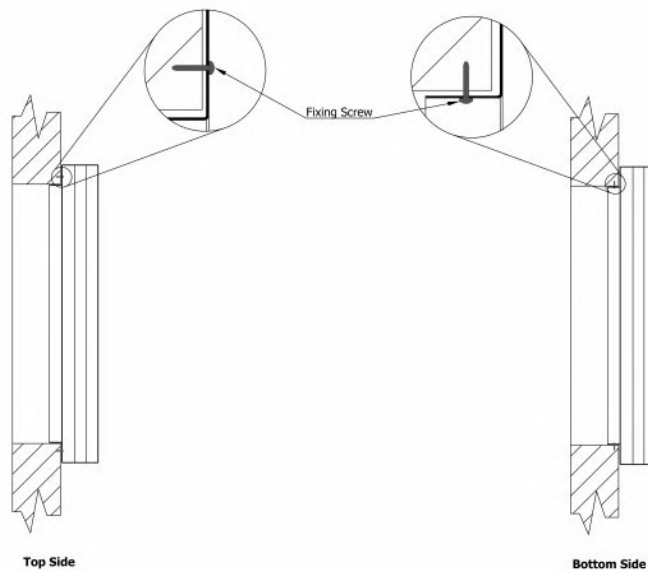
		Free Opening Area (m ² [ft ²])																		
		Height < H > (mm [in])																		
		300 = [12]	400 = [16]	500 = [20]	600 = [24]	700 = [28]	800 = [32]	900 = [36]	1000 = [40]	1100 = [43]	1220 = [48]	1400 = [55]	1600 = [63]	1800 = [71]	2000 = [79]	2200 = [87]	2400 = [95]	2600 = [102]	2800 = [110]	3020 = [119]
Width < W > (mm [in])	200 = [8]	0.068 [0.736]	0.086 [0.920]	0.103 [1.104]	0.120 [1.288]	0.137 [1.473]	0.154 [1.657]	0.171 [1.841]	0.188 [2.025]	0.205 [2.209]	0.226 [2.430]	0.257 [2.761]	0.291 [3.129]	0.325 [3.497]	0.359 [3.865]	0.393 [4.233]	0.428 [4.602]	0.462 [4.970]	0.496 [5.338]	0.534 [5.743]
	300 = [12]	0.084 [0.904]	0.105 [1.130]	0.126 [1.356]	0.147 [1.582]	0.168 [1.808]	0.189 [2.034]	0.210 [2.260]	0.231 [2.486]	0.252 [2.713]	0.277 [2.984]	0.315 [3.391]	0.357 [3.843]	0.399 [4.295]	0.441 [4.747]	0.483 [5.199]	0.525 [5.651]	0.567 [6.103]	0.609 [6.555]	0.655 [7.053]
	400 = [16]	0.115 [1.240]	0.144 [1.550]	0.173 [1.860]	0.202 [2.170]	0.230 [2.480]	0.259 [2.790]	0.288 [3.100]	0.317 [3.410]	0.346 [3.720]	0.380 [4.092]	0.432 [4.650]	0.490 [5.270]	0.547 [5.890]	0.605 [6.510]	0.662 [7.130]	0.720 [7.750]	0.778 [8.370]	0.835 [8.990]	0.899 [9.672]
	500 = [20]	0.131 [1.408]	0.164 [1.760]	0.196 [2.112]	0.229 [2.464]	0.262 [2.816]	0.294 [3.168]	0.327 [3.520]	0.360 [3.872]	0.392 [4.224]	0.432 [4.646]	0.491 [5.280]	0.556 [5.984]	0.621 [6.688]	0.687 [7.392]	0.752 [8.096]	0.818 [8.799]	0.883 [9.503]	0.948 [10.207]	1.020 [10.982]
	600 = [24]	0.162 [1.744]	0.203 [2.180]	0.243 [2.616]	0.284 [3.052]	0.324 [3.488]	0.365 [3.923]	0.405 [4.359]	0.446 [4.795]	0.486 [5.231]	0.535 [5.754]	0.608 [6.539]	0.689 [7.411]	0.770 [8.283]	0.851 [9.155]	0.932 [10.027]	1.013 [10.898]	1.094 [11.770]	1.175 [12.642]	1.264 [13.601]
	700 = [28]	0.178 [1.912]	0.222 [2.390]	0.266 [2.868]	0.311 [3.345]	0.355 [3.823]	0.400 [4.301]	0.444 [4.779]	0.488 [5.257]	0.533 [5.735]	0.586 [6.309]	0.666 [7.169]	0.755 [8.125]	0.844 [9.080]	0.932 [10.036]	1.021 [10.992]	1.110 [11.948]	1.199 [12.904]	1.288 [13.860]	1.385 [14.911]
	800 = [32]	0.209 [2.248]	0.261 [2.809]	0.313 [3.371]	0.365 [3.933]	0.418 [4.495]	0.470 [5.057]	0.522 [5.619]	0.574 [6.181]	0.626 [6.743]	0.689 [7.417]	0.783 [8.428]	0.887 [9.552]	0.992 [10.676]	1.096 [11.799]	1.201 [12.923]	1.305 [14.047]	1.409 [15.171]	1.514 [16.294]	1.629 [17.531]
	900 = [36]	0.224 [2.415]	0.281 [3.019]	0.337 [3.623]	0.393 [4.227]	0.449 [4.831]	0.505 [5.435]	0.561 [6.039]	0.617 [6.642]	0.673 [7.246]	0.741 [7.971]	0.842 [9.058]	0.954 [10.266]	1.066 [11.473]	1.178 [12.681]	1.290 [13.889]	1.403 [15.096]	1.515 [16.304]	1.627 [17.512]	1.750 [18.840]
	1000 = [40]	0.256 [2.751]	0.320 [3.439]	0.383 [4.127]	0.447 [4.815]	0.511 [5.503]	0.575 [6.190]	0.639 [6.878]	0.703 [7.566]	0.767 [8.254]	0.843 [9.079]	0.959 [10.317]	1.086 [11.693]	1.214 [13.068]	1.342 [14.444]	1.470 [15.820]	1.598 [17.195]	1.725 [18.571]	1.853 [19.947]	1.994 [21.460]
	1100 = [43]	0.271 [2.919]	0.339 [3.649]	0.407 [4.379]	0.475 [5.109]	0.542 [5.838]	0.610 [6.568]	0.678 [7.298]	0.746 [8.028]	0.814 [8.758]	0.895 [9.633]	1.017 [10.947]	1.153 [12.406]	1.288 [13.866]	1.424 [15.326]	1.559 [16.785]	1.695 [18.245]	1.831 [19.704]	1.966 [21.164]	2.115 [22.750]
	1220 = [48]	0.302 [3.255]	0.378 [4.069]	0.454 [4.883]	0.529 [5.696]	0.605 [6.510]	0.680 [7.324]	0.756 [8.138]	0.832 [8.951]	0.907 [9.765]	0.998 [10.742]	1.134 [12.206]	1.285 [13.834]	1.436 [15.461]	1.588 [17.089]	1.739 [18.716]	1.890 [20.344]	2.041 [21.971]	2.192 [23.599]	2.359 [25.389]
1400 = [55]	0.349 [3.759]	0.437 [4.698]	0.524 [5.638]	0.611 [6.578]	0.698 [7.518]	0.786 [8.457]	0.873 [9.397]	0.960 [10.337]	1.048 [11.276]	1.152 [12.404]	1.310 [14.095]	1.484 [15.975]	1.659 [17.854]	1.833 [19.733]	2.008 [21.613]	2.183 [23.492]	2.357 [25.372]	2.532 [27.251]	2.724 [29.318]	
1600 = [63]	0.396 [4.263]	0.495 [5.328]	0.594 [6.394]	0.693 [7.459]	0.792 [8.525]	0.891 [9.591]	0.990 [10.656]	1.089 [11.722]	1.188 [12.788]	1.307 [14.066]	1.485 [15.984]	1.683 [18.116]	1.881 [20.247]	2.079 [22.378]	2.277 [24.509]	2.475 [26.641]	2.673 [28.772]	2.871 [30.903]	3.089 [33.248]	
1800 = [71]	0.443 [4.766]	0.554 [5.958]	0.664 [7.149]	0.775 [8.341]	0.886 [9.533]	0.996 [10.724]	1.107 [11.916]	1.218 [13.107]	1.328 [14.299]	1.461 [15.729]	1.661 [18.373]	1.882 [20.257]	2.103 [22.640]	2.325 [25.023]	2.546 [27.406]	2.768 [29.789]	2.989 [32.172]	3.210 [34.555]	3.454 [37.177]	
2000 = [79]	0.490 [5.270]	0.612 [6.588]	0.734 [7.905]	0.857 [9.223]	0.979 [10.540]	1.102 [11.858]	1.224 [13.175]	1.346 [14.493]	1.469 [15.810]	1.616 [17.391]	1.836 [19.763]	2.081 [22.398]	2.326 [25.033]	2.570 [27.668]	2.815 [30.303]	3.060 [32.938]	3.305 [35.573]	3.550 [38.208]	3.819 [41.106]	
2200 = [87]	0.536 [5.774]	0.671 [7.217]	0.805 [8.661]	0.939 [10.104]	1.073 [11.548]	1.207 [12.991]	1.341 [14.434]	1.475 [15.878]	1.609 [17.321]	1.770 [19.053]	2.012 [21.652]	2.280 [24.538]	2.548 [27.425]	2.816 [30.312]	3.084 [33.199]	3.353 [36.086]	3.621 [38.973]	3.889 [41.860]	4.184 [45.035]	
2400 = [95]	0.583 [6.278]	0.729 [7.847]	0.875 [9.416]	1.021 [10.986]	1.166 [12.555]	1.312 [14.124]	1.458 [15.694]	1.604 [17.263]	1.750 [18.833]	1.925 [20.716]	2.187 [23.541]	2.479 [26.679]	2.770 [29.818]	3.062 [32.957]	3.353 [36.096]	3.645 [39.234]	3.937 [42.373]	4.228 [45.512]	4.549 [48.965]	
2600 = [102]	0.630 [6.781]	0.788 [8.477]	0.945 [10.172]	1.103 [11.867]	1.260 [13.563]	1.418 [15.258]	1.575 [16.953]	1.733 [18.648]	1.890 [20.344]	2.079 [22.378]	2.363 [25.430]	2.678 [28.820]	2.993 [32.211]	3.308 [35.602]	3.623 [38.992]	3.938 [42.383]	4.253 [45.774]	4.568 [49.164]	4.914 [52.894]	
2800 = [110]	0.677 [7.285]	0.846 [9.106]	1.015 [10.928]	1.184 [12.749]	1.354 [14.570]	1.523 [16.391]	1.692 [18.213]	1.861 [20.034]	2.030 [21.855]	2.233 [24.041]	2.538 [27.319]	2.876 [30.961]	3.215 [34.604]	3.553 [38.246]	3.892 [41.889]	4.230 [45.531]	4.568 [49.174]	4.907 [52.816]	5.279 [56.823]	
3020 = [119]	0.724 [7.789]	0.905 [9.736]	1.085 [11.683]	1.266 [13.630]	1.447 [15.578]	1.628 [17.525]	1.809 [19.472]	1.990 [21.419]	2.171 [23.366]	2.388 [25.703]	2.714 [29.208]	3.075 [33.102]	3.437 [36.997]	3.799 [40.891]	4.161 [44.785]	4.523 [48.680]	4.884 [52.574]	5.246 [56.469]	5.644 [60.752]	

Sand Rejection Effectiveness Performance Chart
for Sand Particles Grade (76 - 699) µm

HL04- Sand Trap Louver installation instructions

HL04 can be fixed from both top and bottom sides as shown below, according to the following instructions:

1. Align the louver neck to the mounting hole.
2. Use fixing screws to attach the louver to the wall
3. Add the necessary sealant to the Sand trap louver.



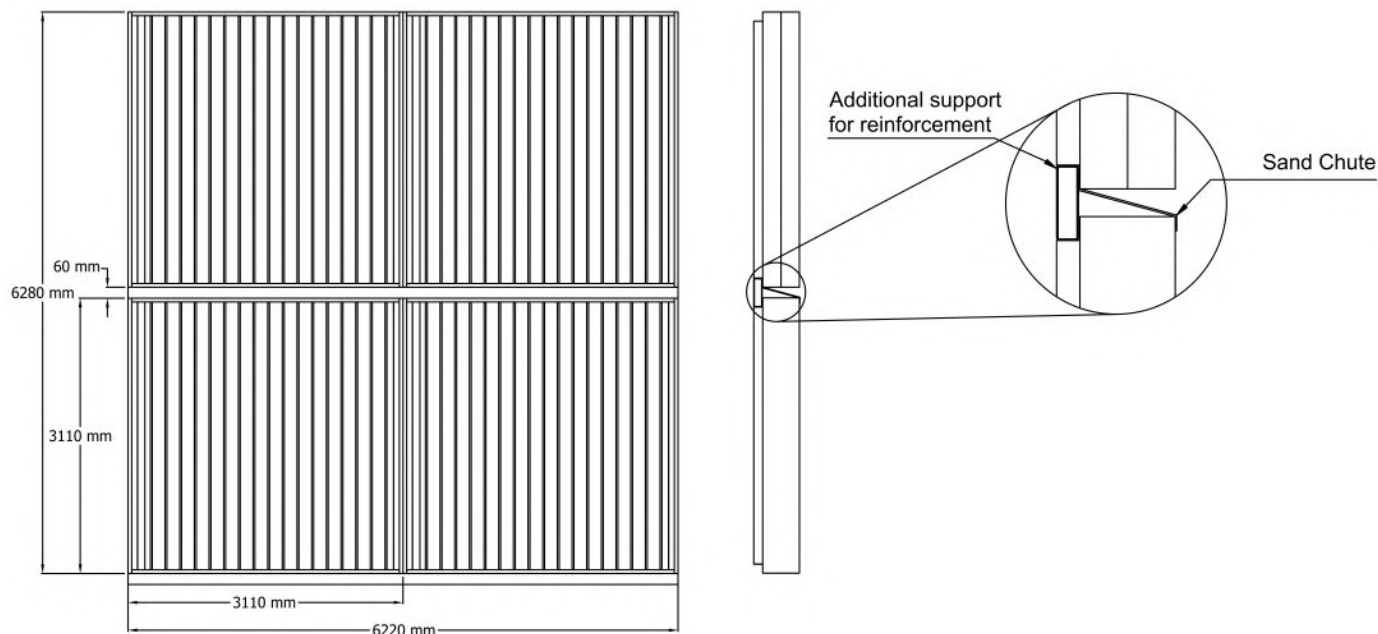
Attention:

- It is essential that all the louver be installed to the wall void prior to the filter installation
- Power tools with 100 mm long shank screw driver is necessary to facilitate installation.

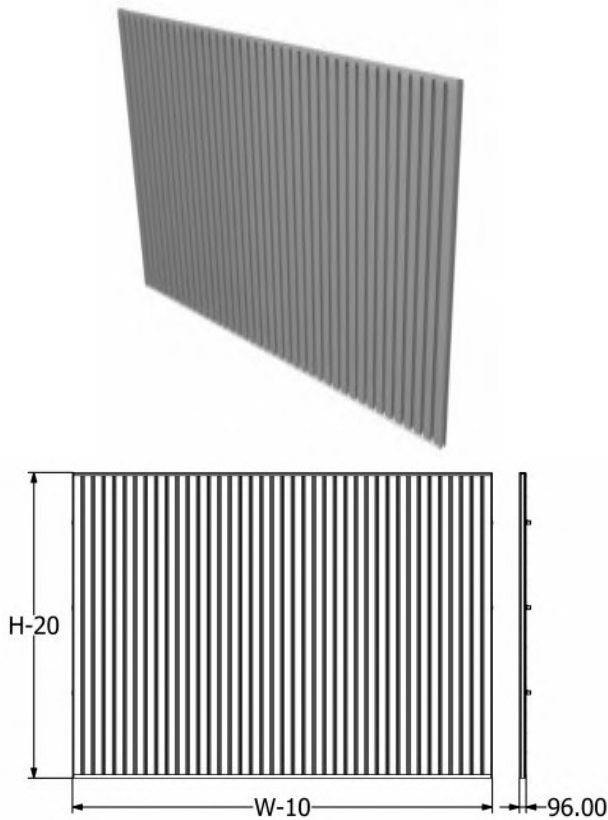
HL04-Multi Section Configuration

HL04 is offered with Multi Section Configuration for widths greater than 3020 mm and for heights greater than 3020 mm.

Example of multi section configuration dimensions.



HL05-Sand Trap Louver (Aluminum Profiles)



Ordering Code

Product Code	:	HL05	-	M	FTH	BTH	MS	FO	F	-	W	x	H
Material													
Frame Thickness													
Blade Thickness													
Mesh Screen													
Filter Option													
Finish													
Width													
Height													

Description

Aluminum Profiles Sand Trap Louver (ASTL) is the excellent choice to cover huge openings, ensuring maximum free area reflected on effectiveness and pressure drop, as a pre-filter for fresh air intake to separate sand particles and prevent them from ingress the building or HVAC system; even at weather with high dust concentration. Our ASTL is corrosion resistant, self-cleaning and maintenance free.

Construction:

Material:

HL05 are supplied with Extruded Aluminum Profiles (6063 and 6061).

Frame:

HL05 is offered with Ga. 14 (2.0 mm).
* Other thicknesses are available upon request.

Blades:

HL05 is offered with Ga. 18 (1.2 mm).
*thickness than the frame thickness.

Mesh Screen:

HL05 is offered with two optional screens.

- Bird Screen with size 19x19x1 mm.
- Insect Screen with size 1x1x0.4 mm.

*Other sizes are available upon request.

Filter [optional]:

HL05 is offered with two aluminum washable filter sizes

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Filter is offered with 5 access options:

- Window Access
- Right Access
- Left Access
- Top Access
- Bottom Access

Finish:

HL05 is offered with powder coating paints and packing

Sizes:

HL05 is offered with many sizes:

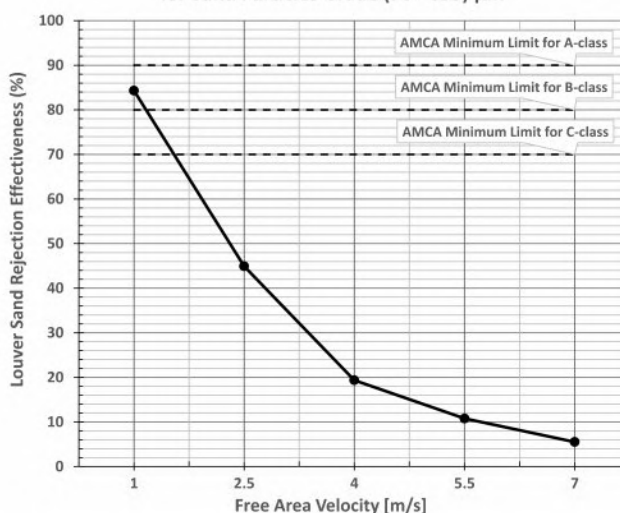
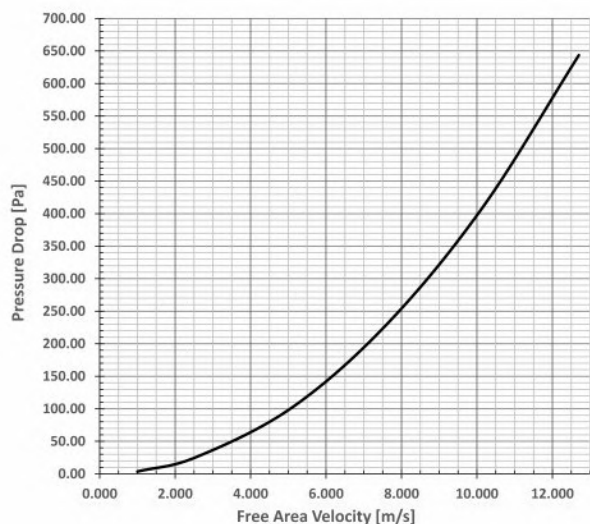
- Minimum size 200 mm W x 155 mm H (8" W x 12" H).
- Maximum size 6000 mm W x 6000 mm H (236" W x 236" H).

* Other sizes are available upon request.
* Duct connection options are available upon request.

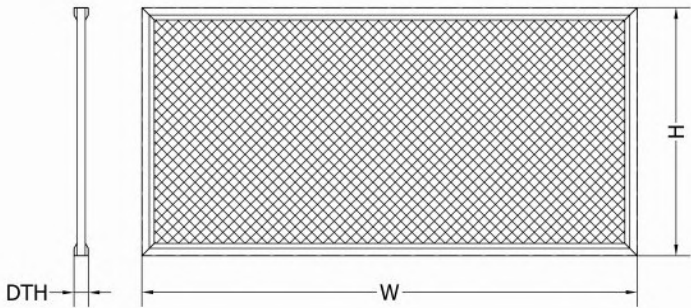
HL05-Performance Data

		Free Opening Area (m ² [ft ²])																							
		Height < H > (mm [in])																							
		155 = [6]	200 = [8]	300 = [12]	400 = [16]	500 = [20]	600 = [24]	700 = [28]	800 = [32]	900 = [36]	1000 = [40]	1100 = [43]	1220 = [48]	1500 = [59]	2000 = [79]	2500 = [98]	3000 = [118]	3500 = [138]	4000 = [157]	4500 = [177]	5000 = [197]	5500 = [216]	6000 = [236]		
Width < W > (mm [in])	200 = [8]	0.007 [0.079]	0.011 [0.113]	0.018 [0.188]	0.025 [0.264]	0.032 [0.339]	0.039 [0.414]	0.046 [0.490]	0.053 [0.565]	0.060 [0.640]	0.067 [0.716]	0.074 [0.791]	0.082 [0.882]	0.102 [1.093]	0.137 [1.469]	0.172 [1.846]	0.207 [2.223]	0.242 [2.599]	0.277 [2.976]	0.312 [3.353]	0.347 [3.730]	0.382 [4.106]	0.417 [4.483]		
	300 = [12]	0.015 [0.158]	0.021 [0.226]	0.035 [0.377]	0.049 [0.527]	0.063 [0.678]	0.077 [0.829]	0.091 [0.980]	0.105 [1.130]	0.119 [1.281]	0.133 [1.432]	0.147 [1.582]	0.164 [1.763]	0.203 [2.185]	0.273 [2.939]	0.343 [3.692]	0.413 [4.445]	0.483 [5.199]	0.553 [5.952]	0.623 [6.706]	0.693 [7.459]	0.763 [8.213]	0.833 [8.966]		
	400 = [16]	0.015 [0.158]	0.021 [0.226]	0.035 [0.377]	0.049 [0.527]	0.063 [0.678]	0.077 [0.829]	0.091 [0.980]	0.105 [1.130]	0.119 [1.281]	0.133 [1.432]	0.147 [1.582]	0.164 [1.763]	0.203 [2.185]	0.273 [2.939]	0.343 [3.692]	0.413 [4.445]	0.483 [5.199]	0.553 [5.952]	0.623 [6.706]	0.693 [7.459]	0.763 [8.213]	0.833 [8.966]		
	500 = [20]	0.015 [0.158]	0.021 [0.226]	0.035 [0.377]	0.049 [0.527]	0.063 [0.678]	0.077 [0.829]	0.091 [0.980]	0.105 [1.130]	0.119 [1.281]	0.133 [1.432]	0.147 [1.582]	0.164 [1.763]	0.203 [2.185]	0.273 [2.939]	0.343 [3.692]	0.413 [4.445]	0.483 [5.199]	0.553 [5.952]	0.623 [6.706]	0.693 [7.459]	0.763 [8.213]	0.833 [8.966]		
	600 = [24]	0.022 [0.237]	0.032 [0.339]	0.053 [0.565]	0.074 [0.791]	0.095 [1.017]	0.116 [1.243]	0.137 [1.469]	0.158 [1.695]	0.179 [1.921]	0.200 [2.147]	0.221 [2.373]	0.246 [2.645]	0.305 [3.278]	0.410 [4.408]	0.515 [5.538]	0.620 [6.668]	0.725 [7.728]	0.830 [8.929]	0.935 [10.059]	1.040 [11.189]	1.145 [12.319]	1.250 [13.450]		
	700 = [28]	0.022 [0.237]	0.032 [0.339]	0.053 [0.565]	0.074 [0.791]	0.095 [1.017]	0.116 [1.243]	0.137 [1.469]	0.158 [1.695]	0.179 [1.921]	0.200 [2.147]	0.221 [2.373]	0.246 [2.645]	0.305 [3.278]	0.410 [4.408]	0.515 [5.538]	0.620 [6.668]	0.725 [7.728]	0.830 [8.929]	0.935 [10.059]	1.040 [11.189]	1.145 [12.319]	1.250 [13.450]		
	800 = [32]	0.022 [0.237]	0.032 [0.339]	0.053 [0.565]	0.074 [0.791]	0.095 [1.017]	0.116 [1.243]	0.137 [1.469]	0.158 [1.695]	0.179 [1.921]	0.200 [2.147]	0.221 [2.373]	0.246 [2.645]	0.305 [3.278]	0.410 [4.408]	0.515 [5.538]	0.620 [6.668]	0.725 [7.728]	0.830 [8.929]	0.935 [10.059]	1.040 [11.189]	1.145 [12.319]	1.250 [13.450]		
	900 = [36]	0.029 [0.316]	0.042 [0.452]	0.070 [0.753]	0.098 [1.055]	0.126 [1.356]	0.154 [1.658]	0.182 [1.959]	0.210 [2.260]	0.238 [2.562]	0.266 [2.863]	0.294 [3.165]	0.328 [3.526]	0.406 [4.370]	0.546 [5.877]	0.686 [7.384]	0.826 [8.891]	0.966 [10.398]	1.106 [11.905]	1.246 [13.412]	1.386 [14.919]	1.526 [16.426]	1.666 [17.933]		
	1000 = [40]	0.029 [0.316]	0.042 [0.452]	0.070 [0.753]	0.098 [1.055]	0.126 [1.356]	0.154 [1.658]	0.182 [1.959]	0.210 [2.260]	0.238 [2.562]	0.266 [2.863]	0.294 [3.165]	0.328 [3.526]	0.406 [4.370]	0.546 [5.877]	0.686 [7.384]	0.826 [8.891]	0.966 [10.398]	1.106 [11.905]	1.246 [13.412]	1.386 [14.919]	1.526 [16.426]	1.666 [17.933]		
	1100 = [43]	0.029 [0.316]	0.042 [0.452]	0.070 [0.753]	0.098 [1.055]	0.126 [1.356]	0.154 [1.658]	0.182 [1.959]	0.210 [2.260]	0.238 [2.562]	0.266 [2.863]	0.294 [3.165]	0.328 [3.526]	0.406 [4.370]	0.546 [5.877]	0.686 [7.384]	0.826 [8.891]	0.966 [10.398]	1.106 [11.905]	1.246 [13.412]	1.386 [14.919]	1.526 [16.426]	1.666 [17.933]		
	1220 = [48]	0.037 [0.396]	0.053 [0.565]	0.088 [0.942]	0.123 [1.319]	0.158 [1.695]	0.193 [2.072]	0.228 [2.449]	0.263 [2.826]	0.298 [3.202]	0.333 [3.579]	0.368 [3.956]	0.410 [4.408]	0.508 [5.463]	0.683 [7.346]	0.858 [9.230]	1.033 [11.114]	1.208 [12.997]	1.383 [14.881]	1.558 [16.765]	1.733 [18.648]	1.908 [20.532]	2.083 [22.416]		
	1500 = [59]	0.044 [0.475]	0.063 [0.678]	0.105 [1.130]	0.147 [1.582]	0.189 [2.034]	0.231 [2.486]	0.273 [2.939]	0.315 [3.391]	0.357 [3.843]	0.399 [4.295]	0.441 [4.747]	0.491 [5.289]	0.609 [6.555]	0.819 [8.816]	1.029 [11.076]	1.239 [13.336]	1.449 [15.597]	1.659 [17.857]	1.869 [20.118]	2.079 [22.378]	2.289 [24.639]	2.499 [26.899]		
	2000 = [79]	0.051 [0.554]	0.074 [0.791]	0.123 [1.319]	0.172 [1.846]	0.221 [2.373]	0.270 [2.901]	0.319 [3.428]	0.368 [3.956]	0.417 [4.483]	0.466 [5.011]	0.515 [5.538]	0.573 [6.171]	0.711 [7.648]	0.956 [10.285]	1.201 [12.922]	1.446 [15.559]	1.691 [18.196]	1.936 [20.834]	2.181 [23.471]	2.426 [26.108]	2.671 [28.745]	2.916 [31.382]		
	2500 = [98]	0.066 [0.712]	0.095 [1.017]	0.158 [1.695]	0.221 [2.373]	0.284 [3.052]	0.347 [3.730]	0.410 [4.408]	0.473 [5.086]	0.536 [5.764]	0.599 [6.442]	0.662 [7.120]	0.737 [7.934]	0.914 [9.833]	1.229 [16.614]	1.544 [20.005]	1.859 [23.395]	2.174 [26.786]	2.489 [30.177]	2.804 [33.567]	3.119 [36.958]	3.434 [40.349]	3.749 [43.749]		
	3000 = [118]	0.081 [0.870]	0.116 [1.243]	0.193 [2.072]	0.270 [2.901]	0.347 [3.730]	0.424 [4.559]	0.501 [5.387]	0.578 [6.216]	0.655 [7.045]	0.732 [7.874]	0.809 [8.703]	0.901 [9.697]	1.117 [12.018]	1.502 [16.162]	1.887 [20.306]	2.272 [24.450]	2.657 [28.594]	3.042 [32.738]	3.427 [36.883]	3.812 [41.027]	4.197 [45.171]	4.582 [49.315]		
	3500 = [138]	0.088 [0.949]	0.126 [1.356]	0.210 [2.260]	0.294 [3.165]	0.378 [4.069]	0.462 [4.973]	0.546 [5.877]	0.630 [6.781]	0.714 [7.685]	0.798 [8.590]	0.882 [9.494]	0.983 [10.579]	1.218 [13.110]	1.638 [17.631]	2.058 [22.152]	2.478 [26.673]	2.898 [31.194]	3.318 [35.715]	3.738 [40.235]	4.158 [44.756]	4.578 [49.277]	4.998 [53.798]		
4000 = [157]	0.103 [1.108]	0.147 [1.582]	0.245 [2.637]	0.343 [3.692]	0.441 [4.747]	0.539 [5.802]	0.637 [6.857]	0.735 [7.911]	0.833 [8.966]	0.931 [10.021]	1.029 [11.076]	1.147 [12.342]	1.421 [15.296]	1.911 [20.570]	2.401 [25.844]	2.891 [31.138]	3.381 [36.393]	3.871 [41.667]	4.361 [46.941]	4.851 [52.216]	5.341 [57.490]	5.831 [62.764]			
4500 = [177]	0.118 [1.266]	0.168 [1.808]	0.280 [3.014]	0.392 [4.219]	0.504 [5.425]	0.616 [6.631]	0.728 [7.836]	0.840 [9.042]	0.952 [10.247]	1.064 [11.453]	1.176 [12.658]	1.310 [14.105]	1.624 [17.481]	2.184 [23.508]	2.744 [29.536]	3.304 [35.564]	3.864 [41.592]	4.424 [47.620]	4.984 [53.647]	5.544 [59.675]	6.104 [65.703]	6.664 [71.731]			
5000 = [197]	0.125 [1.345]	0.179 [1.921]	0.298 [3.202]	0.417 [4.483]	0.536 [5.764]	0.655 [7.045]	0.774 [8.326]	0.893 [9.607]	1.012 [10.888]	1.131 [12.169]	1.250 [13.450]	1.392 [14.987]	1.726 [18.573]	2.321 [24.978]	2.916 [31.382]	3.511 [37.787]	4.106 [44.191]	4.701 [50.596]	5.296 [56.999]	5.891 [63.405]	6.486 [69.809]	7.081 [76.214]			
5500 = [216]	0.140 [1.503]	0.200 [2.147]	0.333 [3.579]	0.466 [5.011]	0.599 [6.442]	0.732 [7.874]	0.865 [9.305]	0.998 [10.737]	1.131 [12.169]	1.264 [13.600]	1.397 [15.032]	1.556 [16.750]	1.929 [20.758]	2.594 [27.916]	3.259 [35.074]	3.924 [42.232]	4.589 [49.390]	5.254 [56.548]	5.919 [63.706]	6.584 [70.864]	7.249 [78.022]	7.914 [85.180]			
6000 = [236]	0.154 [1.661]	0.221 [2.373]	0.368 [3.956]	0.515 [5.538]	0.662 [7.120]	0.809 [8.703]	0.956 [10.285]	1.103 [11.867]	1.250 [13.450]	1.397 [15.032]	1.544 [16.614]	1.720 [18.513]	2.132 [22.943]	2.867 [30.855]	3.602 [38.766]	4.337 [46.678]	5.072 [54.589]	5.807 [62.501]	6.542 [70.412]	7.277 [78.324]	8.012 [86.235]	8.747 [94.147]			

Sand Rejection Effectiveness Performance Chart
for Sand Particles Grade (76 - 699) μ m



HL20-Aluminum Mesh Air Filter



Ordering Code

Product Code	:	HL20	-	M	FTH	MTH	MO	F	-	W	x	H	x	DTH
Frame Material														
Frame Thickness														
Media Thickness														
Mounting Option														
Finish														
Width														
Height														
Depth														

Description

Heavy duty primary air filters composed of progressive density, expanded aluminum foil laid in layers and held in a cross pattern to form an attracting net, built for first stage filtration of large particle

Construction:

HL20 media is supplied with Aluminum wave and stainless-steel wave

Frame Material:

HL20 are supplied with various material Galvanized steel G90 and G115 in accordance with ASTM A653, Stainless steel 304 and 316 in accordance with ASTM A240 and Aluminum Alloy 1050, 1100 and 3003-H14 in accordance with ASTM B209.

Frame Thickness:

HL20 frame is offered with range of thickness options starting from Ga. 22 (0.8 mm) to Ga. 16 (1.5 mm).

- Other thicknesses are available upon request.

Media Thickness:

HL20 media is an expanded and washable aluminum or stainless-steel, that can be sufficiently cleaned by a mild detergent and warm water wash.

It is available in bonded aluminum mesh with two different thicknesses:

- 1/4-inch aluminum washable filter
- 5/8-inch aluminum washable filter

Mounting Options

HL20 is offered with different mounting options

- Without Handle
- Hinged
- Face Mount
- Side Handle
- Top Handle
- Bottom Handle

Sizes

HL20 is offered with two different depths 1" and 2"

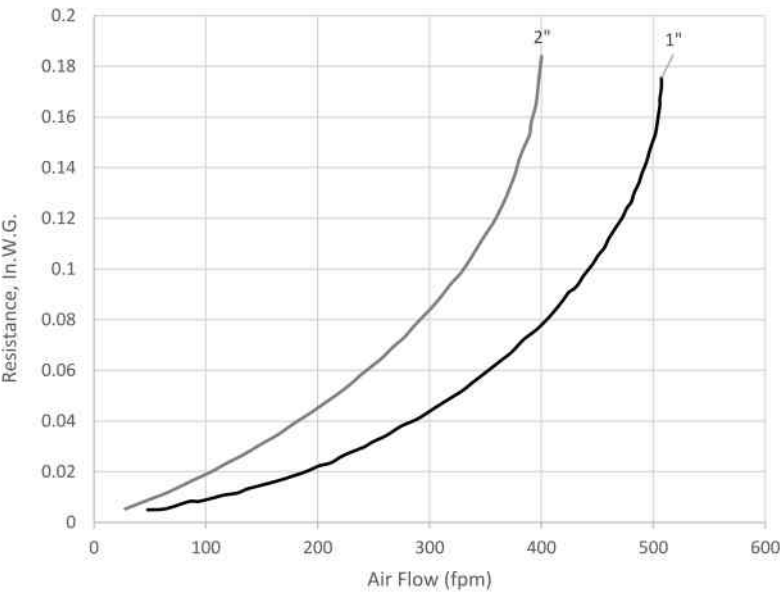
- Minimum size 200 mm W x 300 mm H (8" W x 12" H).
- Maximum size 3020 mm W x 3020 mm H (119" W x 119" H).

Finish

Filter is covered based on request

*Different packaging options are available upon request.

HL20-Performance Data



* Performance based on clean filter



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