

IBD-FS – Fire & Leakage Rated Dampers

Holyoake IBD – FS ‘Fire Seal’ Curtain-type fire and leakage rated dampers are designed to maintain the integrity of the fire resistance of a wall, in which a hole has been formed to permit the passage of air, ducted or otherwise, to enable an air distribution system to function; whilst minimising the impedance of fire and/or smoke and other toxic gasses.

The arrangement of interlocking galvanised steel blades and stainless steel side seals, mounted in a galvanised steel guide channel frame, minimizes space requirements and facilitates ease of installation in ductwork.

The IBD-FS fire and leakage rated damper has been tested in accordance with AS 1530.4 - 2014 and comfortably passed the leakage integrity rates of 11.6.2.1, which are based on the European ISO Standard 10294-1 ‘E’ Classification.

All Holyoake Series IBD - FS units carry up to a 4 HOUR rating, as determined by the following testing Authority.

Fire Rating:

Tested in accordance with Standard AS 1530.4 – 2014, integrity was maintained for in excess of 4 hours.

For the purposes of the Australian Construction Code and New Zealand Building Code they have a FRL/FRR of –/240/–.

• CSIRO

Fire Assessment Short Form Report No. FCO-3356

IBD-FS Damper mounted in a:

- **110 and 140 mm thick masonry wall.**
[Certified for 120 and 240 minute fire rating].
- **90, 96, and 103 mm thick steel or timber framed plasterboard wall.**
[Certified for 60, 90, and 120 minute fire rating].
- **75 mm thick Hebel Wall system (with associated packer*).**
[Certified for 60, 90, and 120 minute fire rating].
- **78 mm thick KOROK Wall system.**
[Certified for 120 minute fire rating].
- **78 mm thick Speedpanel Wall system.**
[Certified for 120 minute fire rating].

• CSIRO

Fire Assessment Short Form Report No. FCO-3356 & FCO-3283

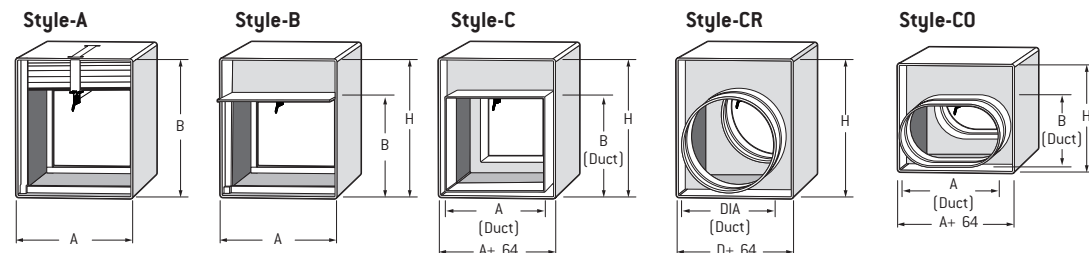
IBD-FS-H Damper mounted in a:

- **120 mm thick solid concrete slab.**
[Certified for 240 minute fire rating].
- **190 mm thick timber framed floor.**
[Certified for 120 minute fire rating].

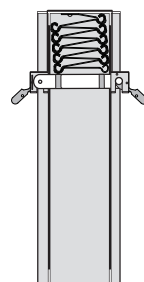
[Short Form Reports and Certificates are available upon request].

* For packer requirements contact your local branch for a copy of FCO-3356.

Duct Connection:

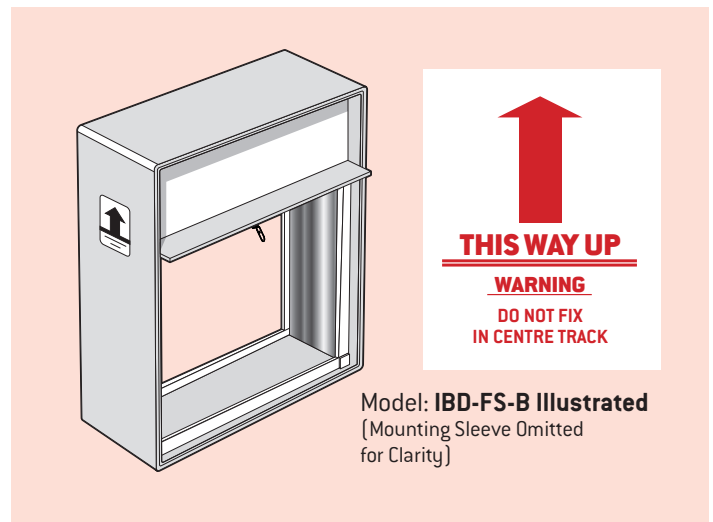


Mounting Sleeve omitted for clarity.



Single Section Maximum Dimensions

Duct Connection Style	A		B		C		CR	CO	
Maximum Dimensions Available	A	B	A	B	A	B	D	A	B
Vertical or Horizontal	1200	1200	1200	1046	1136	1014	1014	1136	1014



Standard Construction

Frame: 110 mm x 1.2 mm galvanised steel, roll formed guide channel.

Blades: 70 mm x 1.0 mm galvanised steel, roll formed Interlocking profile.

Seals: Blade End: stainless steel both sides.

Fusible Links: ‘Safe Test’ Test Latch Model IBD-TL fitted as standard with 71° C Fusible Link

See page 345H for more details.

[Other ratings available on request].

Please contact your local Holyoake branch.

Mounting: Vertical (wall) or Horizontal (floor).

Alternate Activation: Electro Thermal Resettable Link.

This device can be activated by smoke detectors of compatible design, (supply and fit by others). This can be linked to a BMS system to further speed up the initiation of a buildings fire dampers. For smoke damper applications see the HCD elevated temperature smoke damper range on pages 328 - 329H.

Mounting Sleeves: Series IBD-FS fire and leakage rated dampers must be installed in their factory fitted mounting sleeves.

Stainless Steel: Construction in Stainless Steel is available for the IBD-FS.

Assembly and Dimensional Information

(A & B Dimensions allow 6 mm clearance for mounting sleeve of nominated size)

Model: IBD-FS-A-V

Interlocking blade, vertical (wall) mounting damper, gravity operated, blade stack located **within air stream**.

Minimum size A 100 x B 160 mm.
Maximum size A 1200 x B 1200 mm.
(Single Section).

Model: IBD-FS-B-V

Interlocking blade, vertical (wall) mounting damper, gravity operated, blade stack located **out of air stream**.

Minimum size A 100 x B 135 mm.
Maximum size A 1200 x B 1046 mm.
(Single Section).

Model: IBD-FS-A-V (multiple)

The IBD-FS multiple is tested in accordance with AS1530.4-2014 and can be built up to a maximum of 3 units wide by 2 units high, giving a maximum damper size of 3600mm x 2400mm.

IBD-FS multiple section fire dampers are supplied with a 65mm wide support mullion between damper sections. This is to meet the pressure requirements of AS1530.4-2014.

• CSIRO

IBD-FS Modular Damper Fire Assessment Short Form Report No. FCO - 3356
(Certified for up to 240 minute fire rating).

Depending on the size of the fire damper and site access considerations the damper may be supplied in parts for on-site assembly. Contact your local Holyoake branch to discuss this option.

The damper assemblies do not provide structural support.

Alternatively, if individual damper sections are installed they must be separated by a minimum of 200 mm of structural support, of the same fire rating as the rest of the surrounding structure and in accordance with AS 1530.4-2014.

See multiple section damper installation details on page 343H for more information.

Model: IBD-FS-B-V (multiple)

See above for details, except Style 'B' assemblies where more than one unit high, would consist of "B" type units in the top row and "A" type in the bottom row (as illustrated).

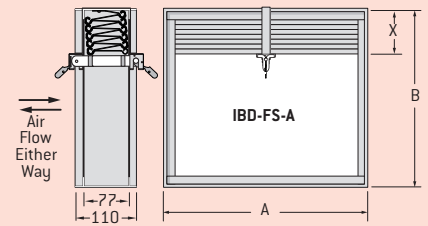
Note: All IBD-FS dampers are fitted with Test Latch Links.

IBD-FS Duct Connection Style 'A'

(Single Section Damper Heights).

Dimension 'B'		Dimension 'X'
From	To	
160	- 183**	30
184	- 303**	42
304	- 423	54
424	- 543	66
544	- 663	78
664	- 783	90
784	- 903	102
904	- 1023	114
1024	- 1143	126
1144	- 1200	138

+ For testing purposes below 210 mm will require complete removal of link and blades dropped manually.



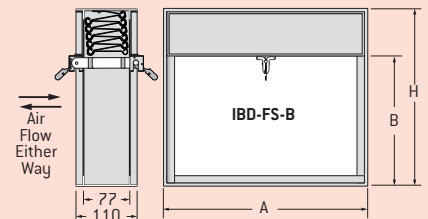
Mounting Sleeve omitted for clarity, refer to pages 339H - 344H.

IBD-FS Duct Connection Style 'B'

(Single Section Damper Heights).

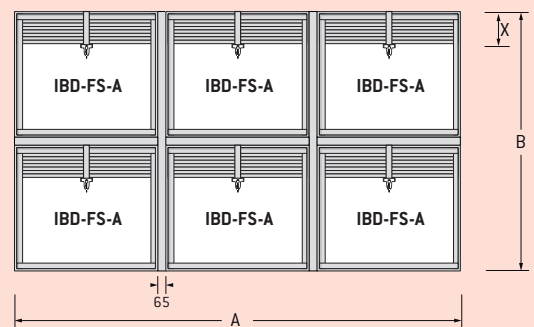
Dimension 'B'		Dimension 'H' = B +
From	To	
135	- 143**	29
144	- 358**	54
359	- 573	79
574	- 788	104
789	- 1003	129
1004	- 1046	154

** For testing purposes below 160 mm will require complete removal of link and blades dropped manually.
* Restricted minimum height when fitted with Electro Thermal Resettable Links. (See separate table).

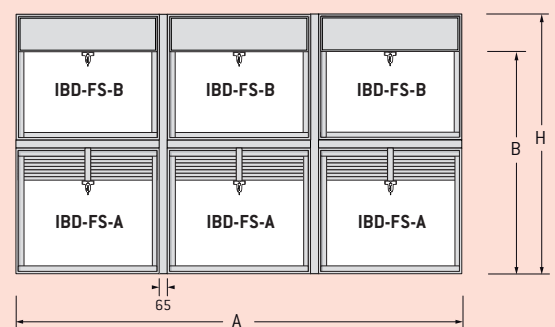


Mounting Sleeve omitted for clarity, refer to pages 339H - 344H.

Model: IBD-FS-A-V (Multiple)



Model: IBD-FS-B-V (Multiple)



Mounting Sleeve omitted for clarity, refer to pages 339H - 344H.

Notes

1. In specifying a fire damper the width should always be stated first and the height second (* Maximum diameter 1014 mm).

2. Nominal dimensions are opening sizes and allow clearance for insertion into mounting sleeve:
6 mm Duct Connection A & B. 3 mm Duct Connection C, CR & CO.
Where this allowance is not required specify "exact size".

IBD-FS – Fire & Leakage Rated Dampers

Assembly and Dimensional Information

(A & B (Duct) Dimensions allow 3 mm clearance for duct of nominated size).

All IBD-FS-C styles, blade stacks located **out of air stream**.

Model: IBD-FS-C-V

Interlocking blade, vertical (wall) mounting damper, gravity operated, fitted with enclosure plates and square, or rectangular spigots to suit duct connections.

Minimum size A 100 (Duct) x B 140 (Duct).

Maximum size A 1136 (Duct) x B 1014 (Duct),
(Single Section).

Model: IBD-FS-CR-V

Interlocking blade, vertical (wall) mounting damper, gravity operated, fitted with enclosure plates and round spigots to suit duct connections.

Minimum size B 150 (Duct Diameter).

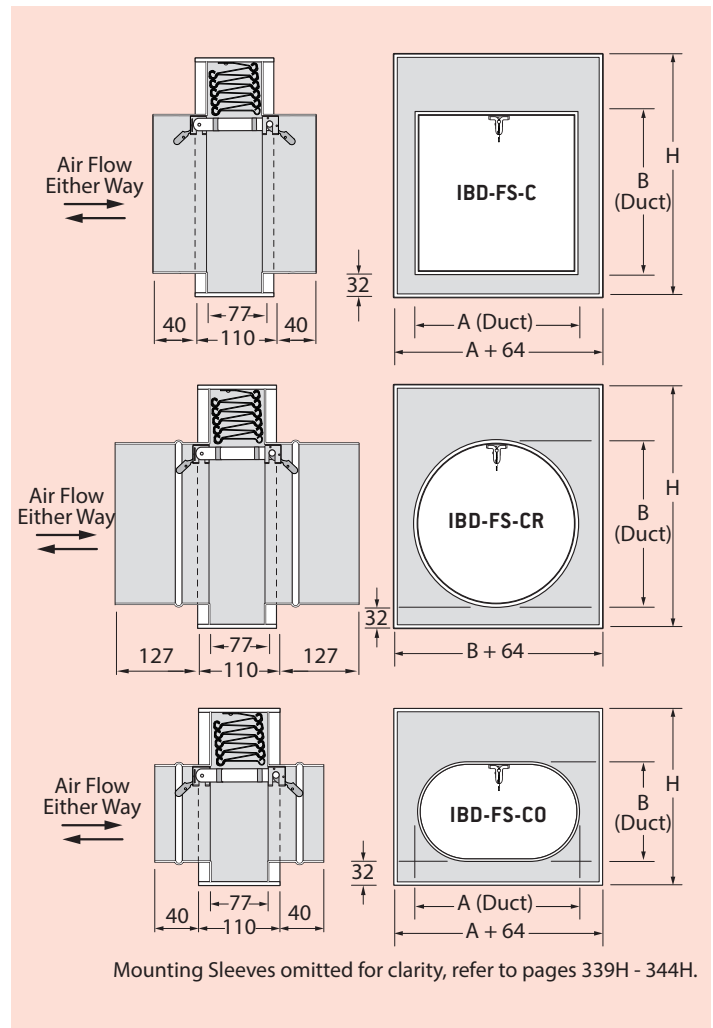
Maximum size B 1014 (Duct Diameter),
(Single Section).

Model: IBD-FS-CO-V

Interlocking blade, vertical (wall) mounting damper, gravity operated, fitted with enclosure plates and oval spigots to suit duct connections.

Minimum size A 100 (Duct) x B 150 (Duct).

Maximum size A 1136 (Duct) x B 1014 (Duct),
(Single Section).



Mounting Sleeves omitted for clarity, refer to pages 339H - 344H.

Note: All IBD-FS dampers are fitted with Test Latch Links.

IBD-FS Duct Connection Style 'C', 'CR' & 'CO'

(Single Section Damper Heights).

Dimension 'B'		Dimension 'H' = B +
From	To	
140	326**	86
327	541	111
542	756	136
757	971	161
972	1014	186

* Restricted minimum (DUCT) height/diameter when fitted with Electro Thermal Resettable Links, (See separate table).

** For testing purposes below 150 mm will require complete removal of link and blades dropped manually, (IBD-FS-C Only).

Typical Multiple Assembly

In accordance with AS1530.4-2014, where a damper exceeds the the maximum test size it may be built into a modular assembly of dampers, with approval from a registered testing authority.

Maximum multiple unit module for IBD-FS dampers is 3 wide by 2 high single sections.*

Where 'H' requires more than one section, the blade stack for the lower section will be in the air stream.

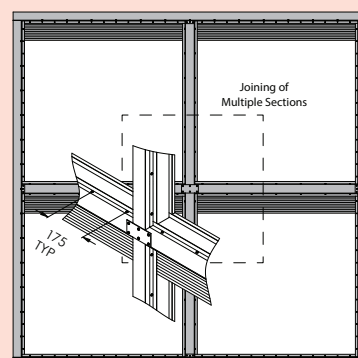
The extent of this obstruction may be determined from the table to the right, for the appropriate size. Dimension in the right hand column minus 32 mm.

Adequate fire rated bracing must be provided by the installer to prevent collapse of multiple unit assemblies when closed, even under relatively low pressure differential conditions.

Multi section units must be installed with suitable supporting construction to adhere to BCA, or Local Authority Building Control Approval.

The damper assemblies do not provide structural support.

Alternatively, if individual damper sections are installed they must be separated by a minimum of 200 mm of structural support, of the same fire rating as the rest of the surrounding structure and in accordance with AS 1530.4-2014.



Assembly and Dimensional Information

{A & B Dimensions allow 6 mm clearance for mounting sleeve of nominated size}

Model: IBD-FS-A-H

Interlocking blade, horizontal (floor) mounting damper, constant force spring operated, blade stack located **within air stream**.

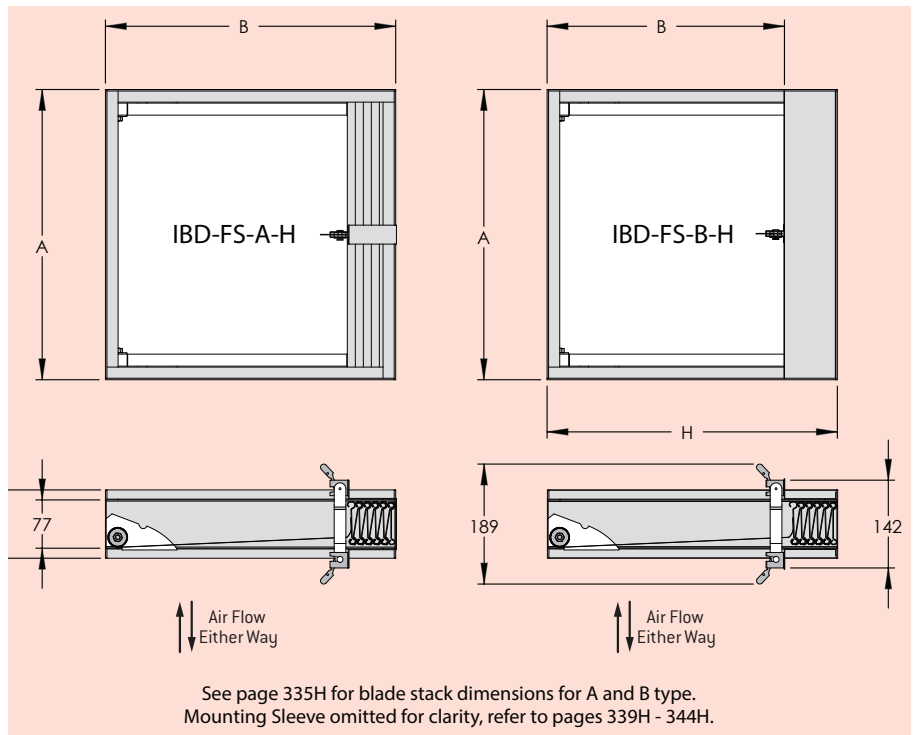
Minimum size A 125 x B 180 mm.
Maximum size A 1200 x B 1200 mm.
{Single Section}.

Model: IBD-FS-B-H

Interlocking blade, horizontal (floor) mounting damper, constant force spring operated, blade stack located **out of air stream**.

Minimum size A 125 x B 144 mm.
Maximum size A 1200 x B 1046 mm.
{Single Section}.

Note: All IBD-FS dampers are fitted with Test Latch Links.



Model: IBD-FS-A-H (multiple)

The IBD-FS multiple is tested in accordance with AS1530.4-2014 and can be built up to a maximum of 3 units wide by 2 units high, giving a maximum damper size of 3600mm x 2400mm.

IBD-FS multiple section fire dampers are supplied with a 65mm wide support mullion between damper sections. This is to meet the pressure requirements of AS1530.4-2014.

• CSIRO

IBD-FS Modular Damper Fire Assessment Short Form Report No. FCO - 3356

{Certified for up to 240 minute fire rating}.

Depending on the size of the fire damper and site access considerations the damper may be supplied in parts for on-site assembly. Contact your local Holyoake branch to discuss this option.

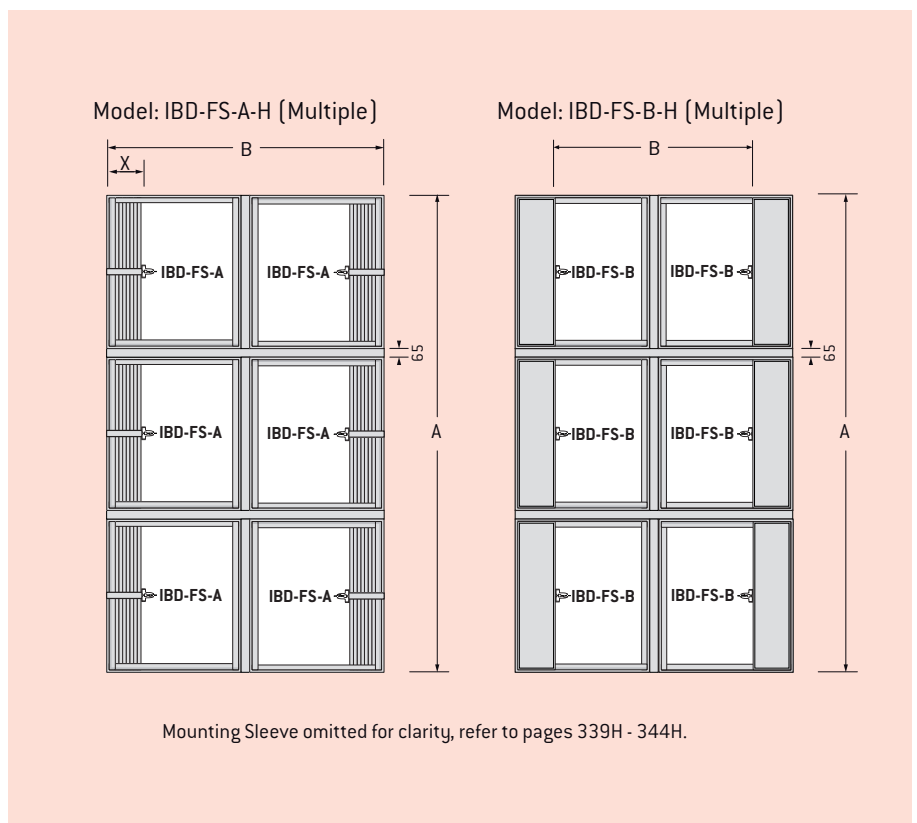
The damper assemblies do not provide structural support.

Alternatively, if individual damper sections are installed they must be separated by a minimum of 200 mm of structural support, of the same fire rating as the rest of the surrounding structure and in accordance with AS 1530.4-2014.

See multiple section damper installation details on page 343H for more information.

Model: IBD-FS-B-H (multiple)

See above for details, except Style 'B' assemblies where more than one unit high, would consist of "B" type units in the top and bottom row {as illustrated}.



Notes

- In specifying a fire damper the width should always be stated first and the height second [* Maximum diameter 1014 mm].
- Nominal dimensions are opening sizes and allow clearance for insertion into mounting sleeve:
6 mm Duct Connection A & B. 3 mm Duct Connection C, CR & CO.
Where this allowance is not required specify "exact size".

IBD-FS – Fire & Leakage Rated Dampers

Assembly and Dimensional Information

(A & B (Duct) Dimensions allow 3 mm clearance for duct of nominated size).

All IBD-FS-C styles, blade stacks located **out of air stream**.

Model: IBD-FS-C-H

Interlocking blade, horizontal (floor) mounting damper, constant force spring operated, fitted with enclosure plates and square, or rectangular spigots to suit duct connections.

Minimum size A 100 (Duct) x B 140 (Duct).

Maximum size A 1136 (Duct) x B 1014 (Duct), (Single Section).

Model: IBD-FS-CR-H

Interlocking blade, horizontal (floor) mounting damper, constant force spring operated, fitted with enclosure plates and round spigots to suit duct connections.

Minimum size B 150 (Duct Diameter).

Maximum size B 1014 (Duct Diameter), (Single Section).

Model: IBD-FS-CO-H

Interlocking blade, horizontal (floor) mounting damper, constant force spring operated, fitted with enclosure plates and oval spigots to suit duct connections.

Minimum size A 100 (Duct) x B 150 (Duct).

Maximum size A 1136 (Duct) x B 1014 (Duct), (Single Section).

Note: All IBD-FS dampers are fitted with Test Latch Links.

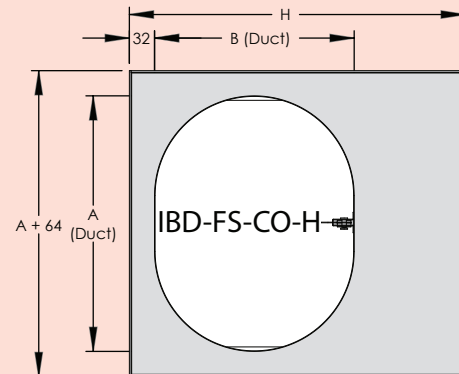
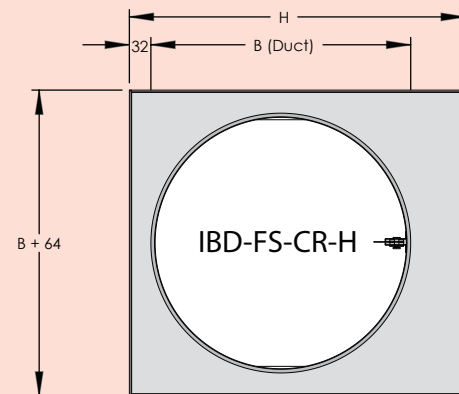
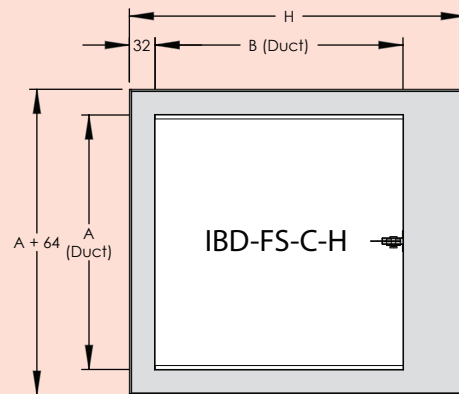
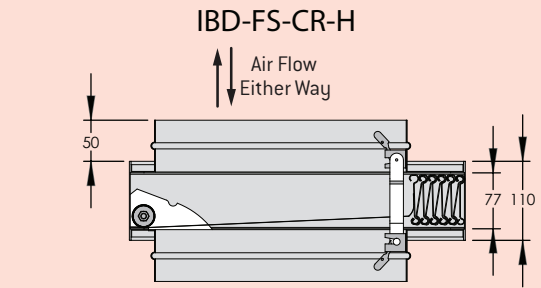
IBD-FS Duct Connection Style 'C', 'CR' & 'CO'

(Single Section Damper Heights).

Dimension 'B'		Dimension 'H' = B +
From	To	
140	- 326**	86
327	- 541	111
542	- 756	136
757	- 971	161
972	- 1014	186

* Restricted minimum (DUCT) height/diameter when fitted with Electro Thermal Resettable Links, (See separate table).

** For testing purposes below 150 mm will require complete removal of link and blades dropped manually, (IBD-FS-C Only).



Mounting sleeves omitted for clarity, refer to pages 339H - 344H.

Damper Installation

The following installation method and diagrams (shown on the following pages), are presented as the method by which

Holyoake IBD-FS fire and leakage rated dampers must be installed.

It draws upon SMACNA fire, smoke and radiation damper installation guide for HVAC systems, fifth edition, 2002 and Standard AS 1682.1 and 1682.2

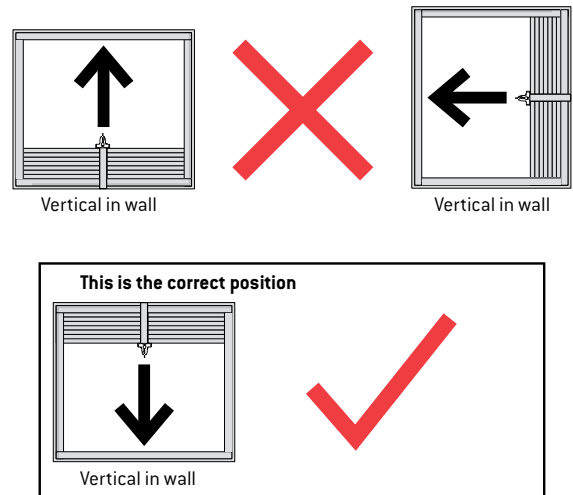
Dampers must be installed as tested.

- (I) The casing shall completely penetrate the wall and be retained:
 - (A) on both sides by four 40 x 60 x 2 mm mounting angles, in such a manner that it can expand in a fire without distorting the blades in a closed position; or
 - (B) on the accessible side only by four 40 x 60 x 2 mm mounting angles. These can be fixed to the fire damper and to the fire barrier through oversized holes and penny washers. Fixings should be finger tight (to allow movement for thermal expansion) but locked, i.e. with double nut (lock nut).

Mounting angles^{3,4,5} shall be butted against the face of the wall and fixed to the fire damper casing. The width of the angle section on the separating element shall be not less than twice the clearance between the fire damper body and the penetration.

- (II) The fire and leakage rated damper shall be installed so that the airflow¹ does not impede its closure, and air velocities² do not exceed the damper's limit (10 m/s).
- (III) The method of attachment of ductwork to the fire and leakage rated damper must be such that any deformation, or collapse of the ductwork in a fire, does not dislodge the fire and leakage rated damper, or affect its performance. This is best achieved by the use of slip joints which will allow damaged ductwork to fall away. Refer to "Breakaway Joints" within AS 1682.1 and AS 1682.2.
- (IV) IBD-FS fire dampers do not require packing between the sleeve and penetration (both vertical and horizontal).
- (V) **Clearance** between the sleeve and penetration should be such that the hole size may be no less than the overall sleeve size plus **22mm** in both width and height, as in the tested prototype. However, in no case should total clearance exceed 50% of the angle face width. For Multiple Section fire dampers the clearance shall be **30mm**, see pg 343H for further details.

- (VI) Dampers must have a minimum damper separation of 200mm between dampers installed in separate ducts or 75mm between the damper and an adjacent construction element. (See page 343H).
- (VII) Access doors, or removable pressed panels, must be provided for duct entry, to test and reset release mechanisms and to inspect the fire and leakage rated damper.
- (VIII) When installed and closed, the blade and pivots must be fully contained within the penetrated element and within the casing, as tested (AS 1530.4 - 2014).
- (IX) Curtain type fire and leakage rated dampers may not be used as control dampers. i.e. they must be installed fully open.
- (X) All Holyoake IBD-FS type fire and leakage rated dampers must be sleeve mounted using the factory fitted sleeves and angles^{3,4,5}. **See details on following pages.**
- (XI) Series IBD-FS fire and leakage rated dampers must not be installed either with blades vertical (on end) or with the blade stack below the opening.



- (XII) Ensure damper is square and free from racking, that there are no obstructions in the center track, and that it is installed vertically in accordance with the "this way up" arrow on every damper. (See Page 334H).
- (XIII) IBD-FS fire dampers must include a completed installers label (supplied) compliant with AS 1682.2 - 2015.

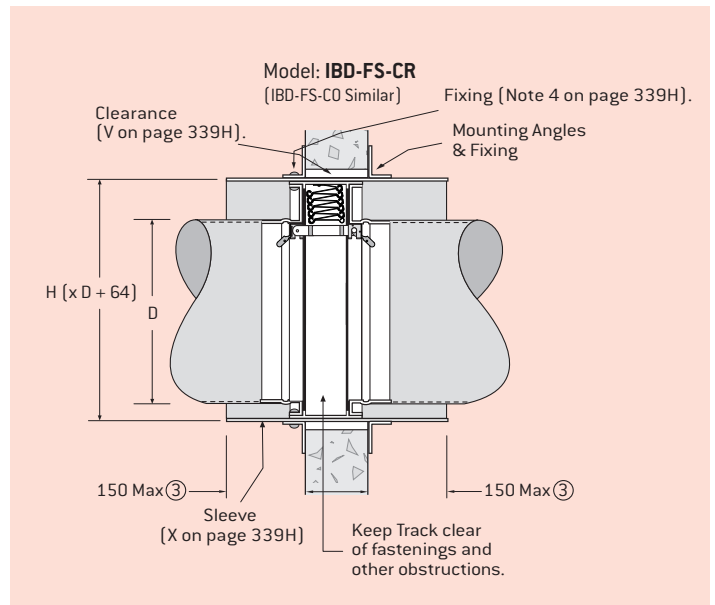
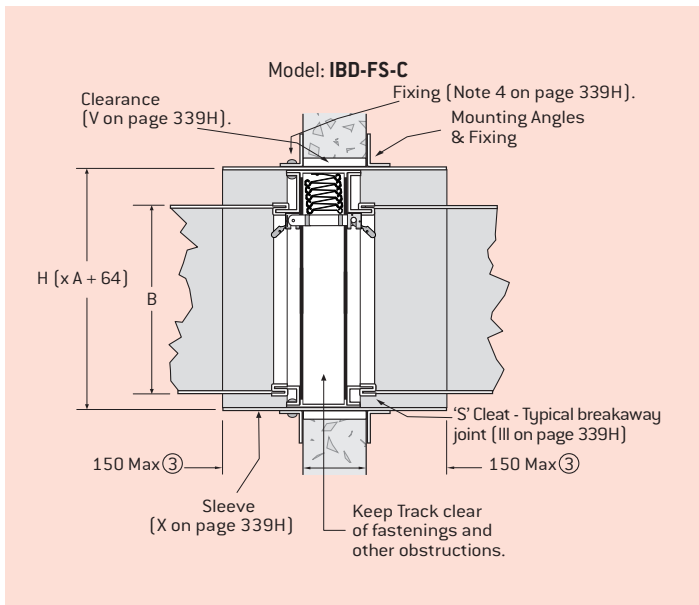
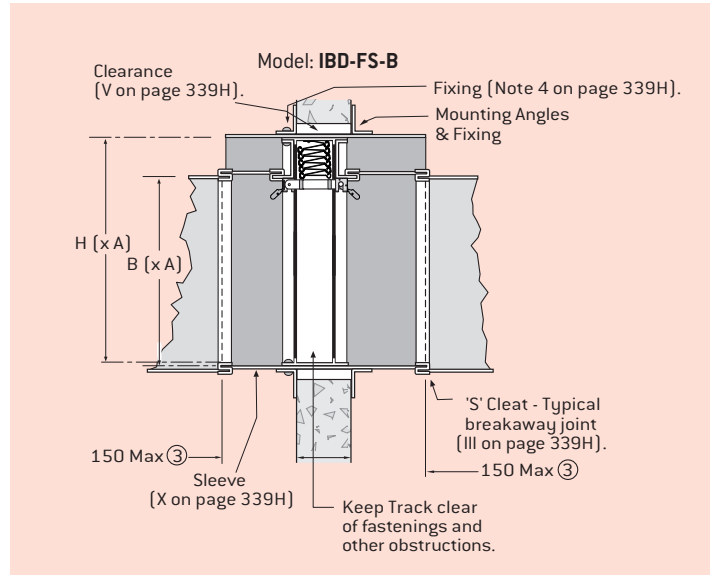
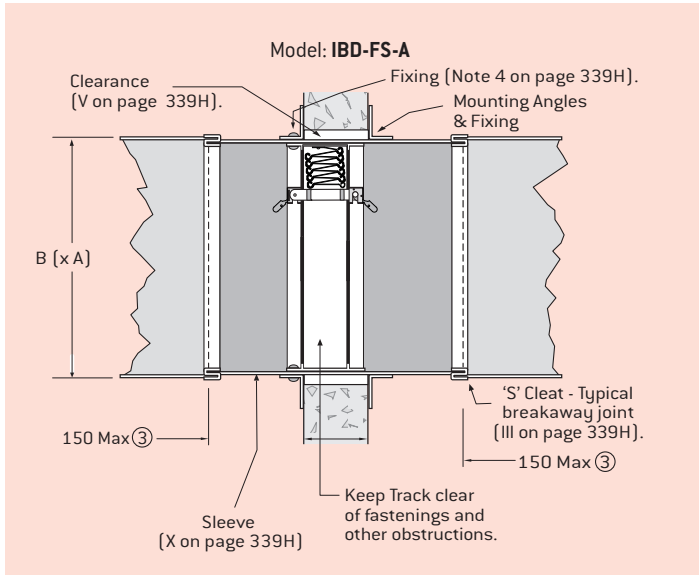
Notes

- 1 Air flow may be from either direction for Holyoake Series IBD-FS.
- 2 While damper size influences acceptable velocities (i.e. the larger the damper the lower the velocity), Holyoake suggests a maximum of 10 m/s on IBD-FS dampers. Pressure differential across the closed damper should not exceed 750 Pa.
- 3 The damper and fixed retaining angles are factory fitted to the sleeves. The loose angles are provided with pre-punched holes for the appropriate number of site fixings. (Optional fixing screws can be provided).
- 4 Retaining angles are a minimum thickness of 2 mm, as tested (AS 1530.4 - 2014). They are mandatory on all four sides of at least one face, but need not be welded to form a frame.
- 5 Materials for sleeves and retaining angles comply with AS 1682.1 and AS 1682.2 - 2015 and AS 1530.4 - 2014 as tested, which specifies using galvanised steel with a coating class of not less than Z275.
- 6 Fire damper certifications are consistently updated, contact your local Holyoake branch for updated installation details and compatible wall/floor constructions.

IBD-FS – Fire & Leakage Rated Dampers

Vertical Damper Installation

IBD-FS Fire and Leakage Rated Damper, Installation Various Styles in a Masonry Wall.



Guide Product Weights	
IBD-FS Curtain Fire Dampers	Approximate Weight in Kg
IBD-FS-A 200 x 200	2.1
IBD-FS-A 600 x 600 (Inc Sleeve)	16.47
IBD-FS-B 206 x 500	4.6
IBD-FS-B 250 x 250	3.56
IBD-FS-B 400 x 375	6.34
IBD-FS-B 760 x 560	12.79
IBD-FS-B 1050 x 700	11.61

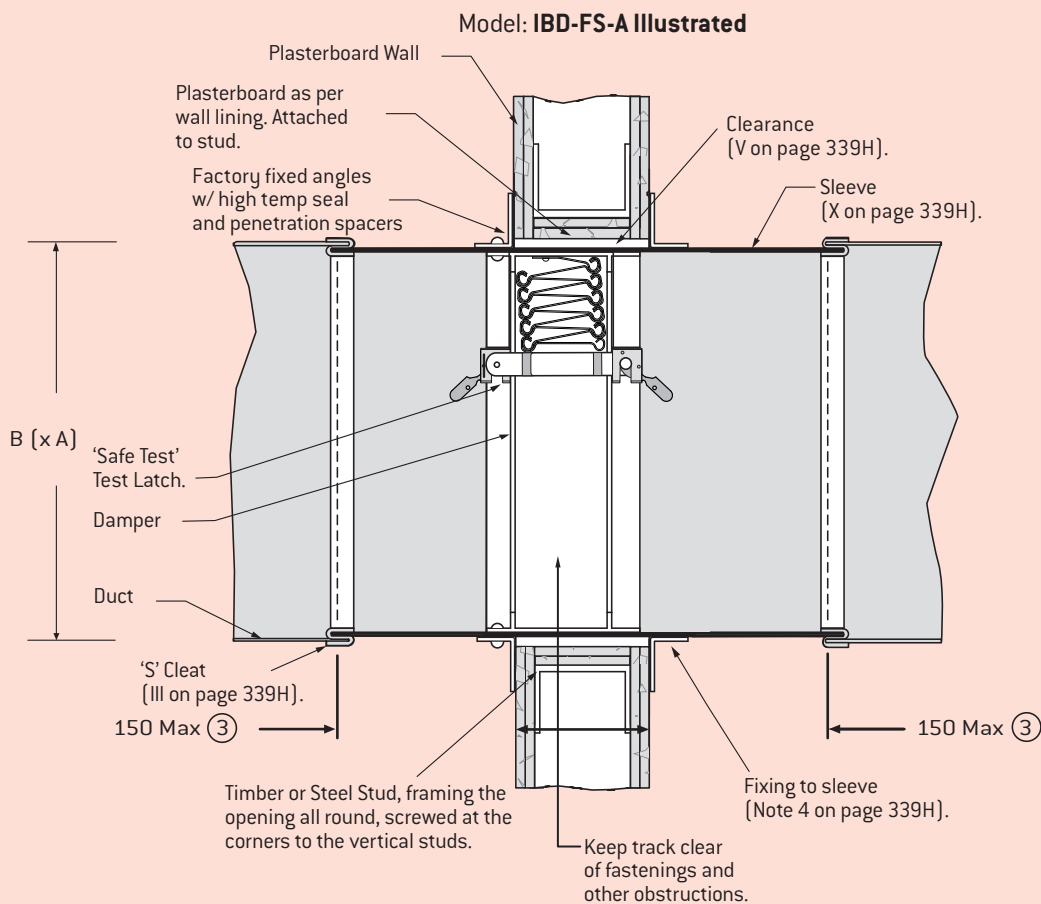
Guide Product Weights	
IBD-FS Curtain Fire Dampers	Approximate Weight in Kg
IBD-FS-B 350 x 350 (Inc Sleeve)	16.09
IBD-FS-B 400 x 375 (Inc Sleeve)	16.36
IBD-FS-B 500 x 350 (Inc Sleeve)	19.73
IBD-FS-CR 150 Diameter	3.16
IBD-FS-CR 200 Diameter	4.15
IBD-FS-CR 250 Diameter	5.21
IBD-FS-CR 450 Diameter	10.8
IBD-FS-CR 400 Diameter (Inc Sleeve)	23.75

Notes

1. Refer to Damper Installation and Notes on Page 339H.
2. For 'H' dimension refer to tables on pages 335H - 338H.
3. Refer to Construction Note 6 on Page 344H.
4. Above details are intended as a guide for field installation of sleeves.

Vertical Damper Installation

IBD-FS Fire and Leakage Rated Damper, Installation in a Plasterboard Wall.



(IBD-FS-B, C, CR & CO similar, with duct connections as per masonry drawings on page 340H).

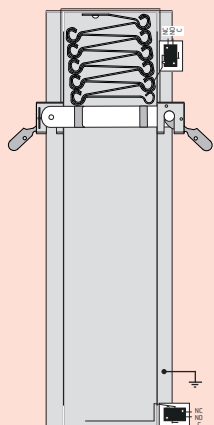
Reset and Release Microswitches

Optional Release and/or Reset Microswitches are available, factory fitted.

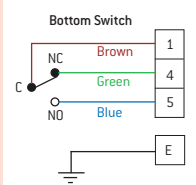
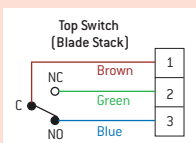
(Note: Standard switches are not fire rated).

Contact your local Holyoake branch for details.

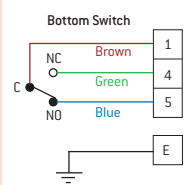
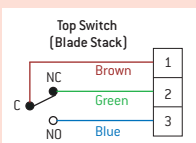
IBD-FS Reset and Release Micro Switches



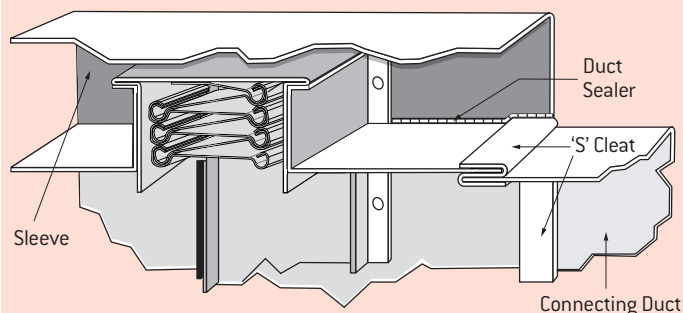
**Damper Open
(Blades Stacked)**



**Damper Closed
(Blades Released)**



Duct attachment method for the IBD-FS-B in Sleeve



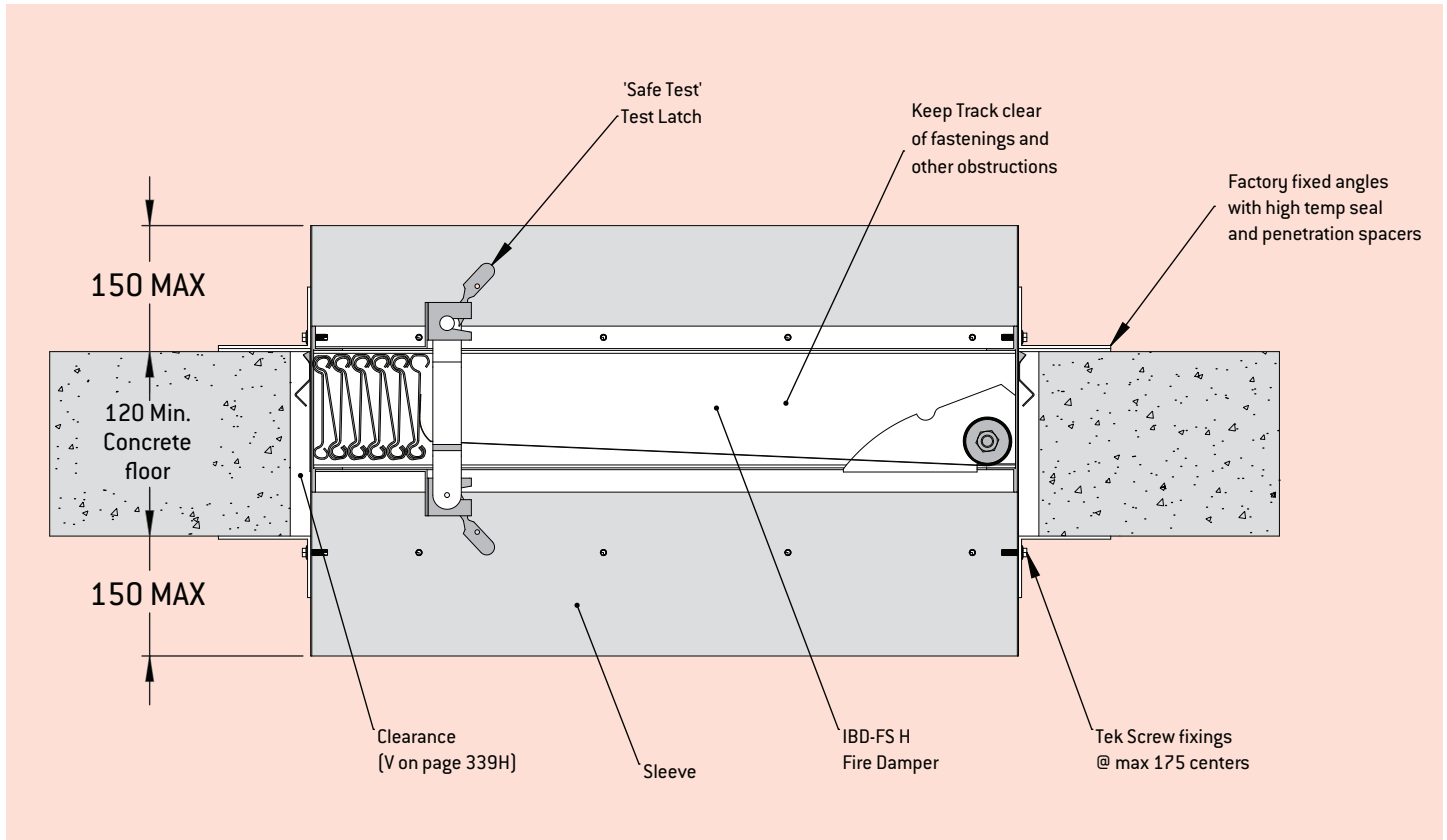
Notes

1. Refer to Damper Installation and Notes on Page 339H.
2. For Various Duct Connection Styles refer to page 340H.
3. Refer to Construction Note 6 on Page 344H.
4. Above details are intended as a guide for field installation of sleeves.

IBD-FS – Fire & Leakage Rated Dampers

Horizontal Damper Installation

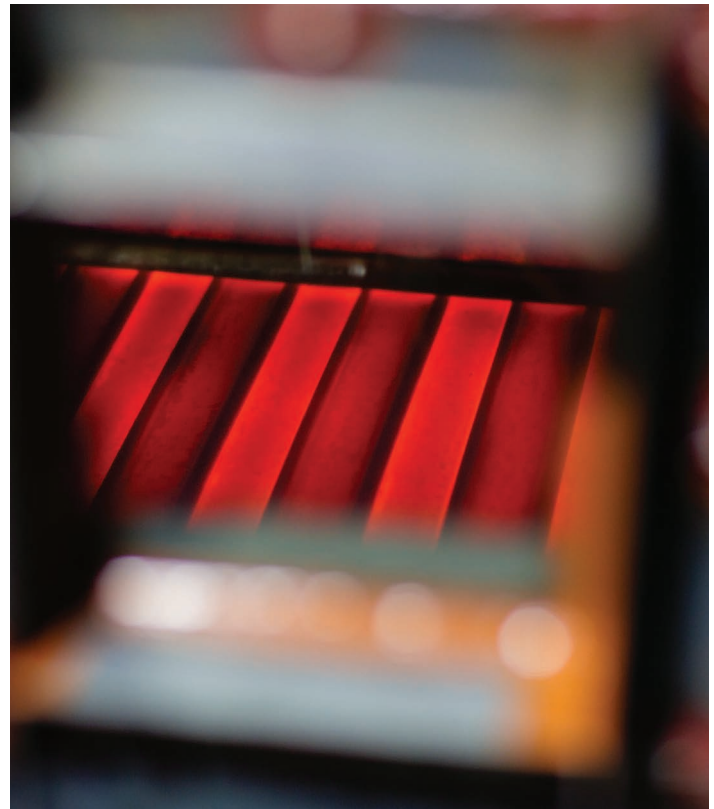
For IBD-FS Horizontal in a concrete slab floor.



IBD-FS horizontal specific instructions

Dampers must be installed as tested.

- (I) The Factory fixed angles must be located on the top of the penetration in accordance with the “this way up” label on every damper. The blade catch bracket must be oriented as illustrated in the above figure.
- (II) Attachments between damper and riser ducts do not require breakaway joints provided that the riser shaft only contains building services. See AS1682.2-2015 for full details of this.
- (III) Where insulated ductwork mounted above the fire damper is required under AS1668.1-2015, it shall be installed so that it will not breakaway or collapse in a fire.
- (IV) IBD-FS horizontal fire dampers include a blade catch to ensure a positive lock of the blades on closure. To release when testing, the blades must be pulled tight to create tension to disengage the catch.



IBD-FS Horizontal AS1530.4 certification testing.

Multiple Section Fire Dampers Installation

IBD-FS Fire and Leakage Rated Damper Assembly for oversize openings.

Multiple sections dampers are installed as per single section dampers. See either IBD-FS V or H instructions for full details of the installation and requirements.

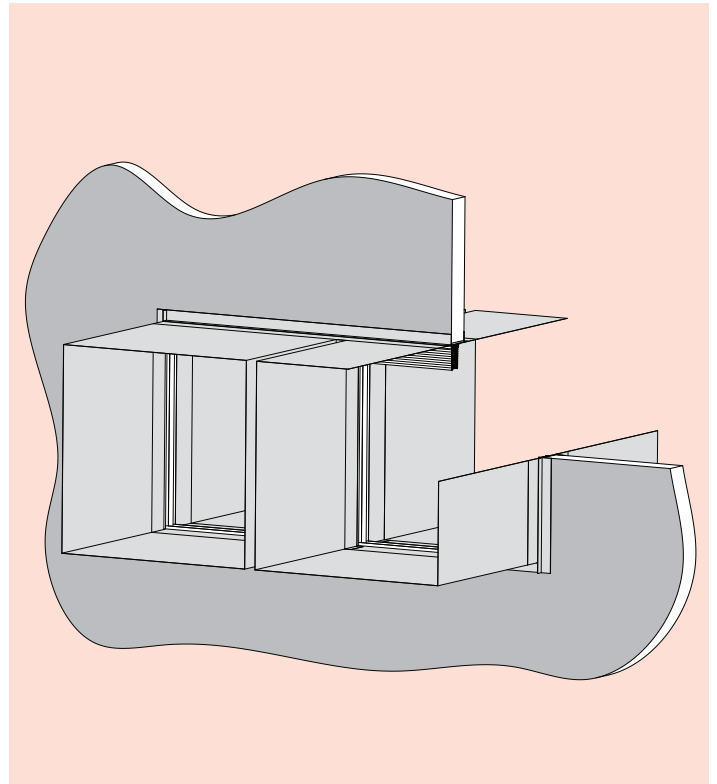
Multi-section IBD-FS fire dampers must be installed with a **30mm** total expansion gap (as tested)

IBD-FS multiple section dampers can be installed as one oversized duct or as multiple ducts through a single penetration.

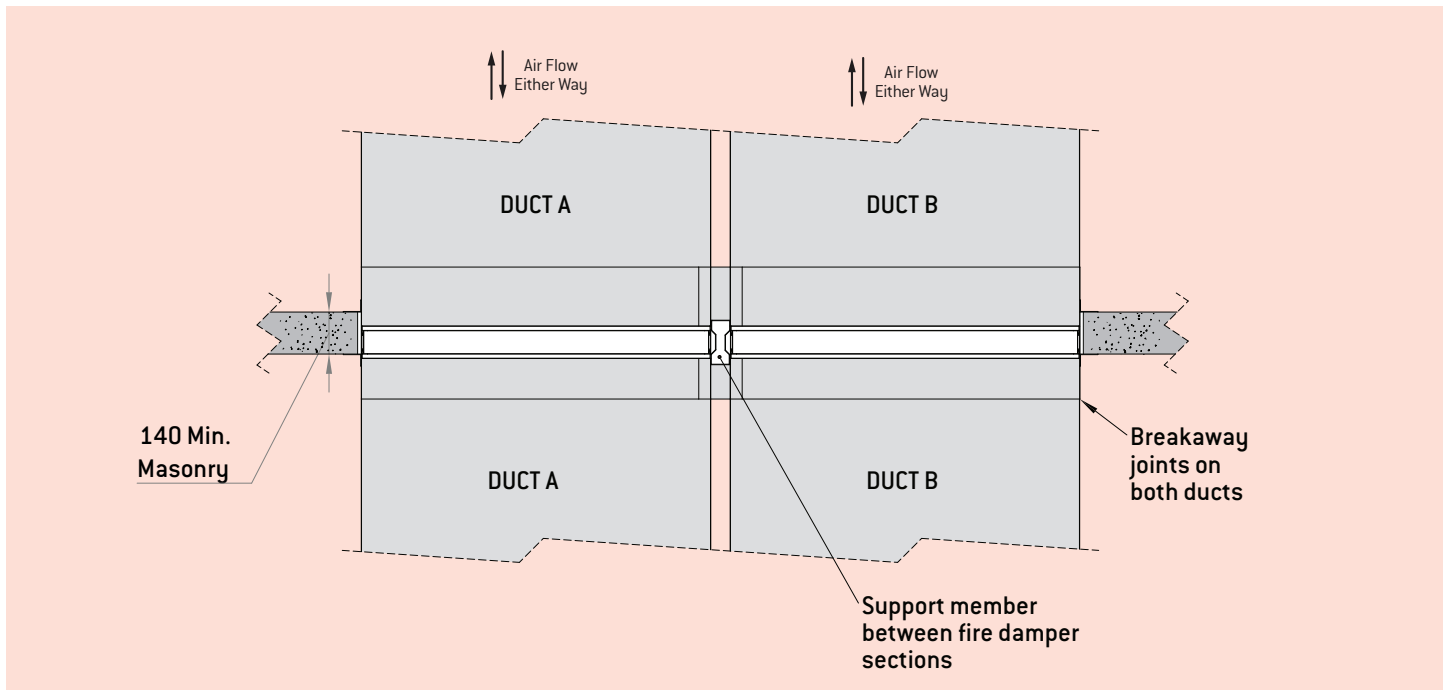
Depending on the size of the fire damper and site access considerations the damper may be supplied in parts for on-site assembly. Contact your local Holyoake branch to discuss this option.

Adequate fire rated bracing must be provided by the installer to prevent collapse of multiple unit assemblies when closed, even under relatively low pressure differential conditions.

Multi section units must be installed with suitable supporting construction to adhere to BCA or Local Authority Building Control Approval.



Fire & Leakage Rated Dampers



Multiple duct installation

Where a 200mm separation between fire dampers cannot be met duct bridging pieces can be used. The 65mm wide support mullion is used between fire damper sections to create a single fire rated penetration. This allows multiple ducts to pass through a fire wall without the need for a 200mm separation between fire dampers.

Contact your local Holyoake branch to discuss this option.

IBD-FS – Fire & Leakage Rated Dampers

IBD-FS Factory Fitted Mounting Sleeves

Holyoake Fire and Leakage Rated Damper Sleeves.

Model IBD-FS fire and leakage rated damper mounting sleeves are constructed as tested to AS1530.4-2014

(Refer also to Page 339H, Damper Installation and Notes).

Two standard sleeve lengths are available, 380mm and 450mm which are suitable for wall/floor thicknesses of 78 -230mm and 230-370mm.

However, optional variable length sleeves are available on request.

Mounting angles are supplied. One set is fixed to one end of the sleeve and the other is supplied loose, for final fixing of these to the sleeve, on site, by others.

All IBD-FS sleeves are supplied factory fixed to the appropriate damper.

Minimum Wall Thickness:

380mm Standard Sleeve 90 mm.
450mm Standard Sleeve 230 mm.

Maximum Wall Thickness:

380mm Standard Sleeve 230 mm.
450mm Standard Sleeve 370 mm.

Material:

Galvanised Steel Type Z275.

Minimum Dimension:

100 W x 160 mm H (Type IBD-FS-A Only – Refer to pages 335H - 342H and 341H).

Maximum Dimension Thickness

3600 W x 2400 mm H. 0.75 mm.

Flanges

40 x 60 x 2 mm galvanised steel angle. (x4 per side, x 2).

Construction

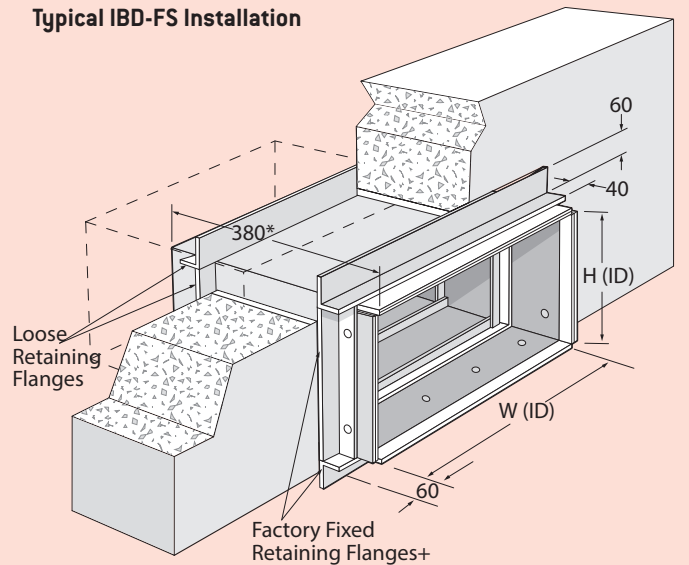
Sleeves are corner lapped and spot-welded, then attached to the damper frame on all four sides, to form a rigid assembly.

- All damper sleeves come with raw edges.
- Optional 'S' cleats on all edges (Typical Breakaway Joint).
- Optional 25 or 35 mm Breakaway flange on all edges.
Do NOT use bolts or 'no bolt corner clips' for Fire Damper Breakaway Joints, (Optional PVC cleats and nylon bolts are available).
(Typical Breakaway Joint – refer to Section K Accessories).
- Type 'B' damper sleeves are fitted with a duct bridging piece.
- An extended damper sleeve is available for wall depths 291 – 690 mm, (specify length required when ordering).
Supplied only as part of a complete unit.
- Casing sleeve may only be extended 150 mm from the face of the wall on each side, with either slip or flanged breakaway connections.

If in excess of these dimensions sleeve should be trimmed back to the appropriate lengths. This then complies with AS 1682, Parts 1 & 2, 2015.

Standard or Extended Sleeve					
Style	A	B	C	CR	CO
Width	A - 3	A - 3	A + 67	D + 67	A + 67
Height	B - 3	H + 3	H + 3	H + 3	H + 3

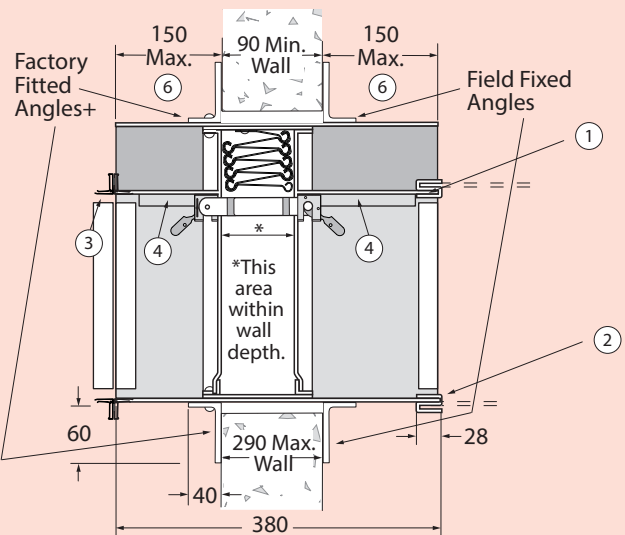
Typical IBD-FS Installation



* Standard length. Specify alternative if required.

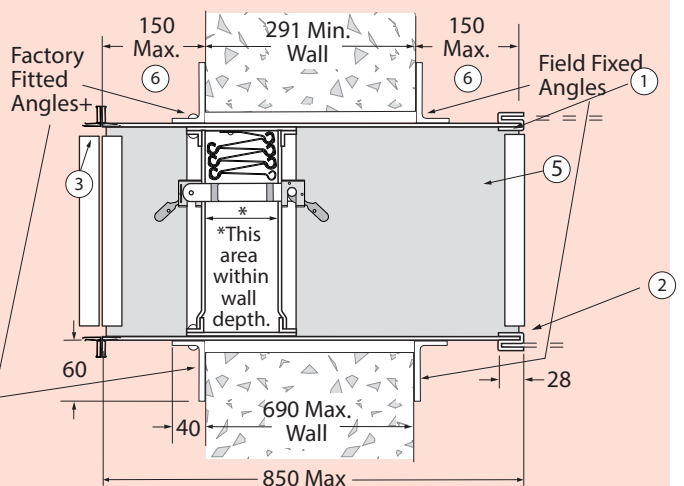
Typical Assembly - Standard IBD-FS Damper Sleeve

(B Type Damper Illustrated)



Typical Assembly - Optional Extended Damper Sleeve

(A Type Damper Illustrated)



'Safe Test' - Test Latch Model IBD-TL

- **Safe and Simple Testing Method.**
- **Test and Reset in minutes.**
- **AS 1851 - 2012 (Section 13) requires that you annually test Fire Dampers.**
- **To ensure the Life and Property saving function for which they are designed, all fire dampers should be drop tested after installation.**
- **Note: All IBD-FS dampers are fitted with 'Safe Test' Test Latch Links, as tested and certified.**

Each Holyoake Series IBD-FS Fire and Leakage Rated Damper is mechanically tested before it is allowed to leave the factory. In the event of damage occurring during transit, on site, or during installation, rendering any fire damper ineffective, failure to function will reveal any warping, track obstruction, or spring failure that may have occurred. This will require rectification, cleaning and removal of the obstacle, prior to retesting and handover.

The Holyoake 'Safe Test' Test Latch Model IBD-TL, is a latching device with a specially made fusible link, which, when the latch is released, swings clear and allows the curtain to close as if the link had parted under the influence of flame.

After testing, the curtain can be re-stacked and the same link clipped back into the latch, where it is again ready to be released in the event of a fire.

To Operate IBD-FS Dampers

1. Remove the duct access door (refer to Section K accessories section of this manual).
2. Using this access, reach in and remove the locking pin from the nearest latch.
3. Check that the locking pin is still in place on the other latch, so that the fusible link is retained by it, when released.
4. Check that the track is clear of any obstruction and keep hands clear.
5. Lift the latch lever and the curtain will rapidly close.
6. Reload the curtain and swing the fusible link back into place in the latch.
7. Replace the locking pin in the latch.
8. Replace the duct access door.

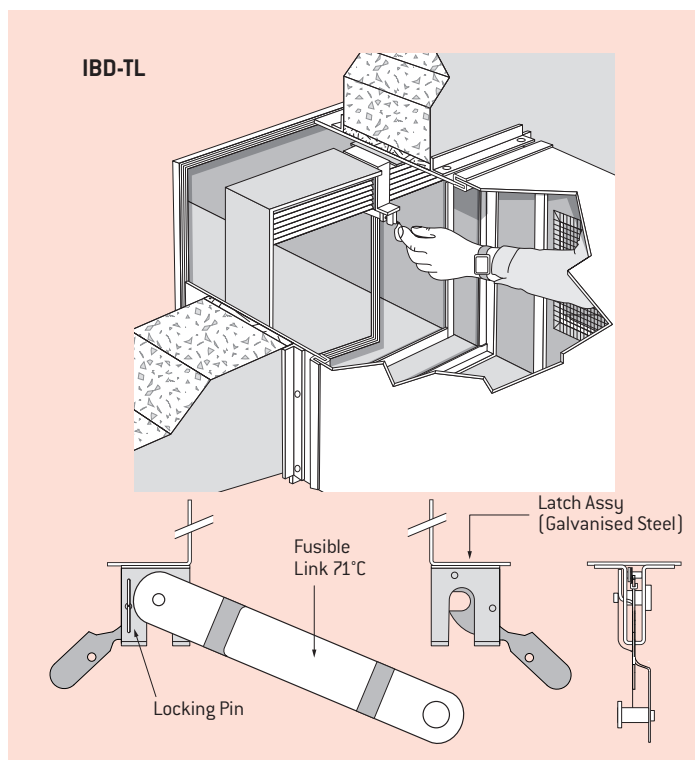
To Operate IBD-FS Dampers below minimum heights shown.

1. Remove the duct access door (refer to Section K accessories section of this manual).
2. Remove locking pin from both sides.
3. Check that the track is clear of any obstruction and keep hands clear.
4. Support the blade pack, lift both latch levers and remove fusible link.
5. Release the blade pack and the curtain will rapidly close.
6. Reload the curtain and support the blade pack, whilst replacing the fusible link locating pins into both latches.
7. Replace both locking pins.
8. Replace the duct access door.

Minimum Duct Height for dampers fitted with Electro Thermal Resettable Links	
Duct Connection Style	Minimum Duct Height
A	240
B	180
C	180
CR	180
CO	180

For testing purposes, all dampers below these heights will require removal of link and blades dropped manually.

Note: Take suitable safety precautions for Hand and Eye protection.

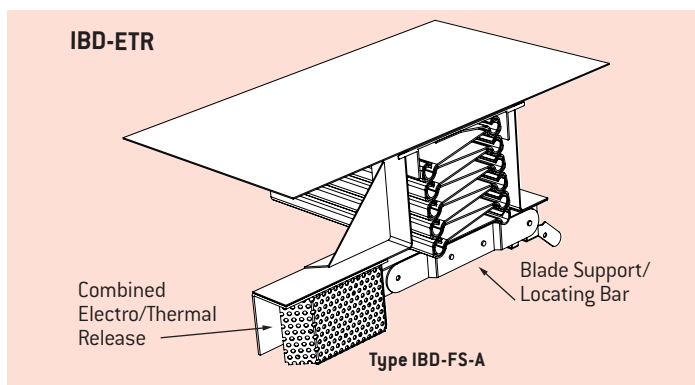


Electro Thermal Resettable Links Model: IBD-ETR

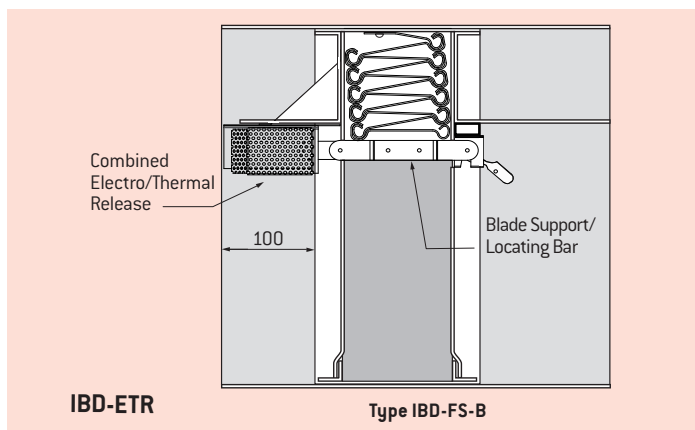
All Holyoake IBD-FS type fire and leakage rated dampers, are available with optional Electro Thermal Resettable Link mechanisms.

Contact your local Holyoake branch for details.

24 V AC or DC Supply Electro Thermal Resettable Release.
Max 30 Sec Release and 60 Sec Reset, with integral 71°C Thermal Resettable Release.



Maximum Damper size with IBD-ETR is 750 x 750 mm.



IBD-FS – Fire & Leakage Rated Dampers

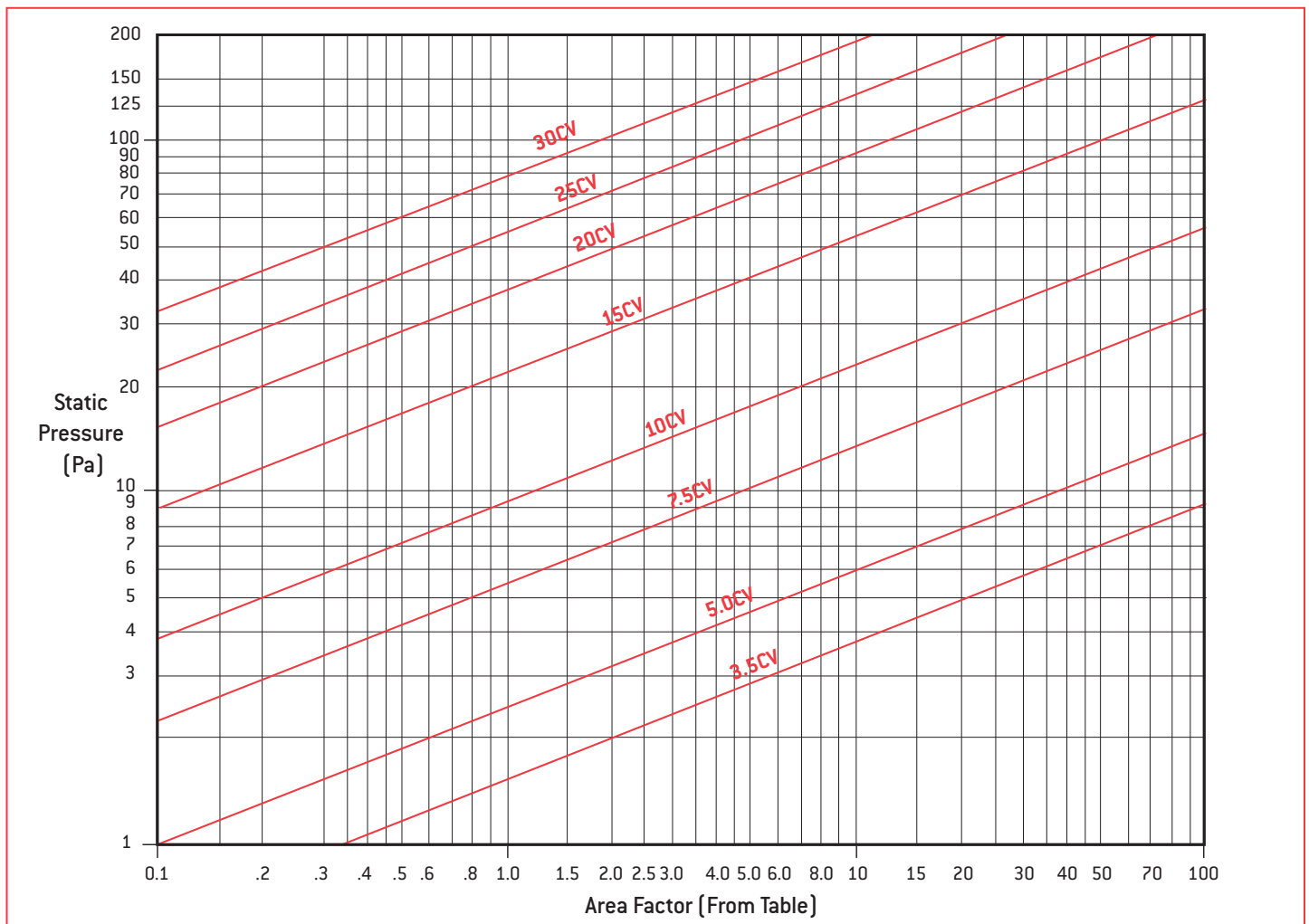
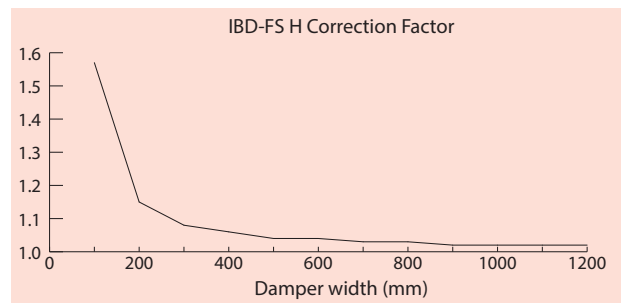
Model: IBD-FS-A

AREA FACTOR TABLE - DUCT CONNECTION STYLE A												
Dim. 'B'	Dimension 'A' Width (mm)											
(mm)	100	200	300	400	500	600	700	800	900	1000	1100	1200
184		55.90	33.90	24.30	19.00	15.60	13.20	11.40	10.10	9.00	8.18	7.47
304	82.70	29.00	17.60	12.60	9.83	8.06	6.83	5.92	5.23	4.68	4.24	3.87
424	55.80	19.60	11.90	8.51	6.63	5.44	4.61	3.99	3.53	3.16	2.86	2.61
544	42.10	14.80	8.95	6.42	5.01	4.10	3.48	3.01	2.66	2.38	2.16	1.97
664	33.80	11.80	7.18	5.15	4.02	3.29	2.79	2.42	2.14	1.91	1.73	1.58
784	28.20	9.90	6.00	4.31	3.36	2.75	2.33	2.02	1.79	1.60	1.45	1.32
904	24.20	8.50	5.15	3.70	2.88	2.36	2.00	1.74	1.53	1.37	1.24	1.13
1024	21.20	7.45	4.51	3.24	2.53	2.07	1.75	1.52	1.34	1.20	1.09	0.99
1144	18.90	6.63	4.02	2.88	2.25	1.84	1.56	1.35	1.19	1.07	0.97	0.88
1200	17.00	5.97	3.62	2.60	2.02	1.66	1.41	1.22	1.08	0.96	0.87	0.80

[All dimensions include 6 mm clearance total between outside of damper frame and inside of duct].

For pressure drop through an open IBD-FS-A fire and leakage rated damper, use the following procedure:

1. Find the Area Factor from the above table, enter duct width and height. For horizontal dampers multiply the area factor by the correction factor on the right.
2. Determine Conversion Velocity (CV) by multiplying Area Factor by flow in m³/s [CV = Area Factor x m³/s].
3. Enter pressure drop chart with Area Factor and establish intersection with Conversion Velocity (CV) line just determined. Read pressure drop on left hand side of the chart.



Notes

1. Static Pressure and Conversion Velocities are correct for 1.2 kg/m³ air density.
2. Ratings are based on dampers installed in accordance with details in this catalogue, with ductwork upstream and downstream.

Model: IBD-FS-B

AREA FACTOR TABLE - DUCT CONNECTION STYLE B												
Dim. 'B' (mm)	Dimension 'A' Width (mm)											
	100	200	300	400	500	600	700	800	900	1000	1100	1200
84			67.90	48.70	38.00	31.10	26.40	22.90	20.20	18.10	16.40	14.90
179		42.40	25.70	18.50	14.40	11.80	9.99	8.67	7.65	6.85	6.20	5.66
299	67.80	23.80	14.40	10.40	8.07	6.61	5.60	4.86	4.29	3.84	3.48	3.17
394	50.30	17.60	10.70	7.68	5.99	4.91	4.16	3.60	3.18	2.85	2.58	2.35
514	37.90	13.30	8.07	5.79	4.51	3.70	3.13	2.72	2.40	2.15	1.94	1.78
609	31.80	11.10	6.75	4.85	3.78	3.10	2.62	2.27	2.01	1.80	1.63	1.49
729	26.30	9.24	5.60	4.02	3.13	2.57	2.18	1.89	1.67	1.49	1.35	1.23
824	23.20	8.14	4.93	3.54	2.76	2.26	1.92	1.66	1.47	1.31	1.19	1.09
944	20.20	7.07	4.29	3.08	2.40	1.97	1.67	1.44	1.28	1.14	1.03	0.94
1046	18.30	6.41	3.89	2.79	2.17	1.78	1.51	1.31	1.16	1.03	0.94	0.86

(All dimensions include 6 mm clearance total between outside of damper frame and inside of duct).

For pressure drop through an open IBD-FS-B fire and leakage rated damper use the following procedure:

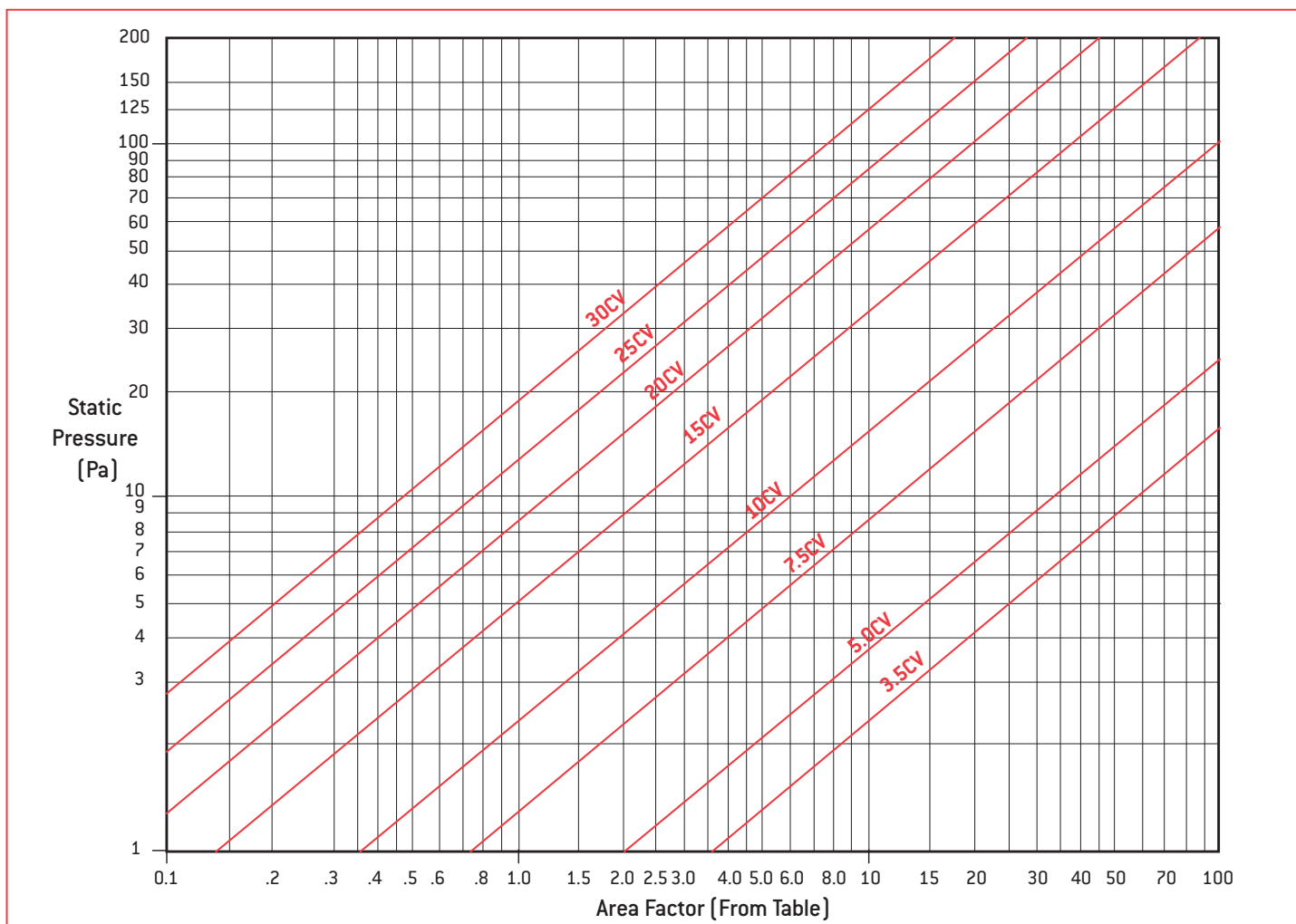
1. Find the Area Factor from the above table, enter duct width and height.
2. Determine Conversion Velocity (CV) by multiplying Area Factor by flow in m^3/s [$CV = \text{Area Factor} \times m^3/s$].
3. Enter pressure drop chart with Area Factor and establish intersection with Conversion Velocity (CV) line just determined. Read pressure drop on left hand side of the chart.

Note: Interpolations while not precise, are adequate for most calculations.

EXAMPLE:

Find the pressure drop across a 500 wide x 514 high model IBD-FS-B fire and leakage rated damper, passing 2.2 m^3/s .

1. From the table using interpolation, the Area Factor is 4.51.
2. $CV = 2.2 \times 4.5 = 9.9$ [10].
3. From pressure drop chart, pressure drop is 8 Pa.



Notes

1. Static Pressure and Conversion Velocities are correct for 1.2 kg/m^3 air density.
2. Ratings are based on dampers installed in accordance with details in this catalogue, with ductwork upstream and downstream.

IBD-FS – Fire & Leakage Rated Dampers

Product Ordering Key and Suggested Specifications

IBD-FS – Fire & Leakage Rated Dampers (Fire Seal).	[A B C CR CO] Duct Connection Style.	[V H] – Width x Height mm Vertical, or Horizontal Mounting.	[TL ETR] TL= Test Latch with 71°C Link, ETR = Electro Thermal Resettable Link.	– SPECIAL OPTIONS Single Pole Microswitch, (For Release Position) , 2 x Single Pole Microswitch, (For Reset and Release Position) , Extended Damper Sleeve, (Specify Wall Thickness) .
---	--	--	--	--

Fire and Leakage Rated Dampers shall be interlocking blade, curtain type, with stainless steel side seals conforming to AS 1530.4 - 2014 leakage requirements and having up to 4 Hour Fire rating.

Fire and Leakage Rated Dampers shall be for Vertical and Horizontal mounting and close by means of a Fusible Link rated at 71°C, or by means of an Electro Thermal Resettable Release Device, incorporating a 71°C Thermal Resettable Release.

“Safe Test” Test Latches and access doors shall be provided so the fire dampers may be test operated at regular intervals after installation, without destroying the fusible links and annually in accordance with AS 1851 - 2012 (Section 13), Routine service of fire protection systems and equipment.

Fire and Leakage Rated Dampers shall be installed in Walls and Floors, utilising factory fitted galvanised steel mounting sleeves and flanges as detailed in AS 1682.1 and AS 1682.2 - 2015 and AS 1530.4 - 2014, and as shown in the manufacturers instructions and drawings within this manual.

Fire and Leakage Rated Dampers shall be Holyoake Series IBD-FS (Fire Seal).

