FIRE-SMOKE SHIELD - CURTAIN TYPE FIRE DAMPER

DESIGNED TO PROVIDE 4-HOUR FIRE RESISTANCE WITH LOW AIR LEAKAGE AND LOW RESISTANCE TO AIR FLOW

FEATURES

EASY TO INSTALL

Series RC400V fire dampers are supplied with sleeve and retaining angles. Hence, it can be installed quickly.

ROBUST CONSTRUCTION

Sleeves are constructed of heavy gage galvanised steel fully welded. Unlike most other fire dampers RC400V fire damper is very rigid and do not warp during handling. Hence it is fail safe.

4 HOURS RATING AND LOW LEAKAGE

RC400V fire damper was tested by the Experimental Building Station of Australia to Australian Standards AS1682-1974: "Fire Damper" for air leakage and AS 1530, Part 4-1979: "Fire Resistance Test of Structure". The fire damper was tested to 4 hour. Unlike other curtain type fire dampers it has been designed for low air leakage.

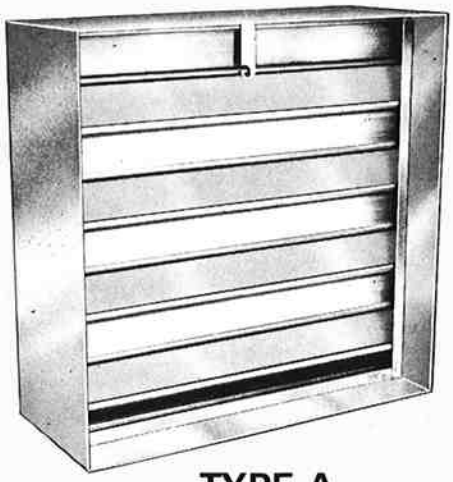
FLEXIBILITY

Series RC400V fire dampers have three variation which make them suitable for low, medium and high velocity system. It can be easily adapted to round or oval duct. Due to its low air leakage it may be used with appropriate external actuating device or ETL electro thermal link to serve as a smoke damper.

LOW AIR RESISTANCE

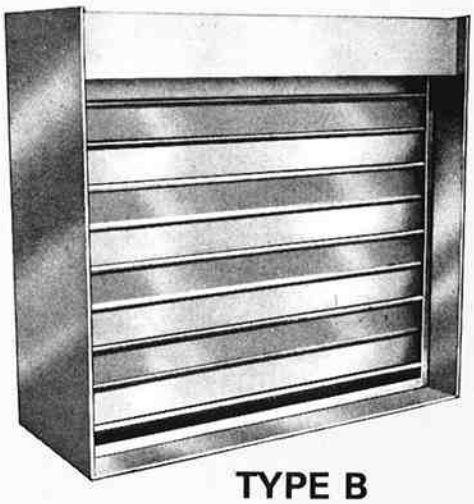
Where static pressure loss is an important consideration collar may be fitted to the damper sleeve such that the blade stack and blade guides are entirely out of the air stream.

TYPES of DAMPERS



TYPE A

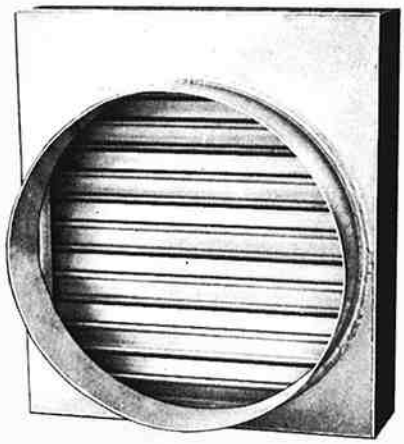
Type A damper is for wall openings or for use with low velocity rectangular ductwork. When used with rectangular duct, the damper is the same nominal size as the duct.



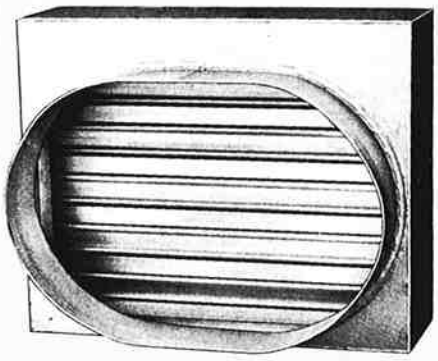
TYPE B

Type B damper is for use with low velocity rectangular duct where it is desirable to keep the blade stack out of the air stream. When the damper is open, the stack of blades is entirely contained within an enclosure above the duct but the damper sleeve width is the same as the duct width.

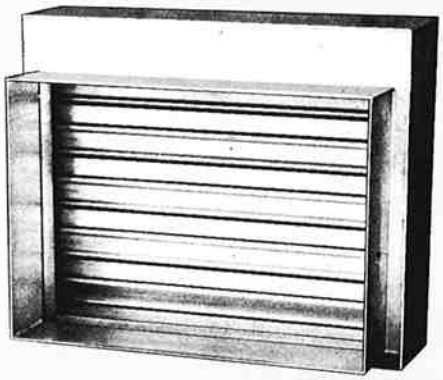
TYPE C



TYPE C ROUND



TYPE C FLAT-OVAL



TYPE C RECTANGULAR

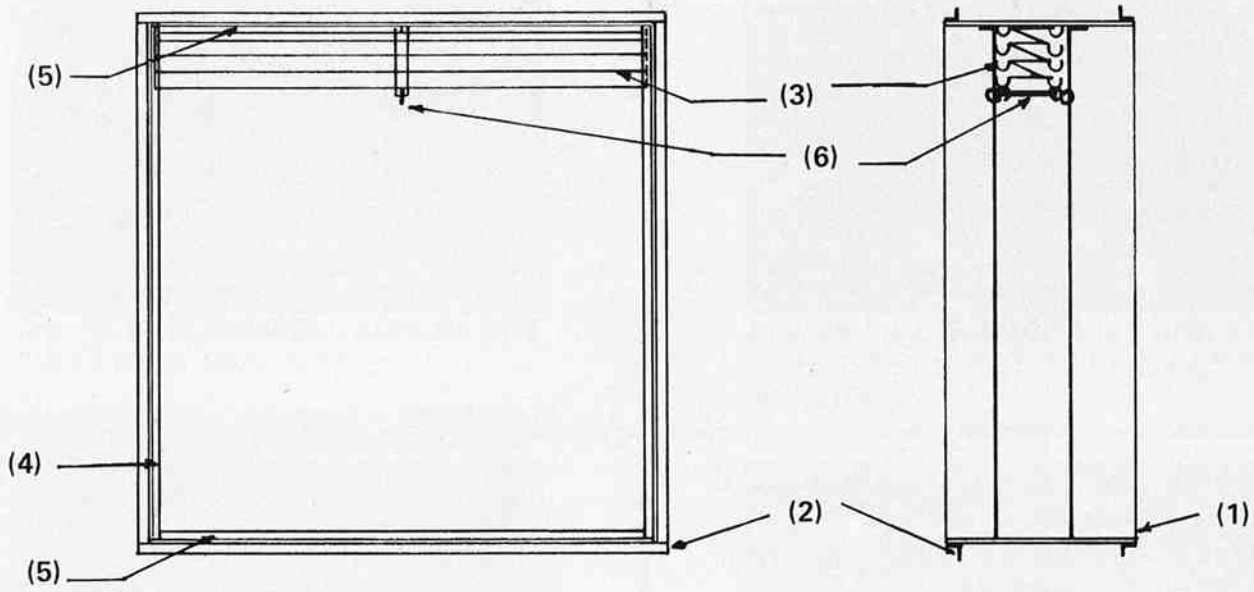
All Type C dampers are for use in high velocity ducts. The dampers have collars of fitting size on both sides of the damper sleeve for attaching the duct. When a Type C damper is open, the blade stack and the blade guides are entirely out of the air stream, thus providing a totally unobstructed flow area with a minimum of pressure drop across the damper.

PRESSURE LOSS

The Type C damper is designed for use in medium and high velocity systems where static pressure loss can be an important consideration. Pressure loss for each type of damper is shown in figure 1 on page 4.

CONSTRUCTION

1. Sleeve - 2.5mm galvanised steel fully welded at the Corners.
2. Retaining Angles - 2.5mm galvanised steel with slotted holes for minor adjustment to suit the wall thickness. 25 x 25mm angles for sizes smaller than 300 x 300mm. 38 x 38mm angles for sizes larger.
3. Blade - rollformed from 1.0mm thick galvanised steel sheet. Blade assembly is fastened to the top of the sleeve with steel rivets.
4. Blade Guide - cold formed 1.2mm thick tack welded to sleeve also serve to increase the rigidity of the damper.
5. Top and Bottom Channels-cold formed channel tack welded to the sleeve serve to increase the rigidity of the damper.
6. Fusible Link-standard type 165° F



TESTING AND PERFORMANCE

OLS Curtain Type Fire Damper is constructed and tested in accordance with the Australian Standard for 4-Hour fire rating, and meets the requirements of Government Departments and Fire Control Authorities throughout the British Commonwealth. The fire damper was subject to very severe tests by the Experimental Building Station of Australia.

AIR-LEAKAGE TEST

The air-leakage test was based on Australian Standard AS1682 - 1974: "Fire Damper". Maximum allowable air leakage base on this standard is shown in figure 2. Air leakage was measured for static pressure up to 1.25 KPa and the result also shown in figure 2. It is clear from the result that model RC400V fire damper shows exceedingly low air leakage.

FIRE-RESISTANCE TEST

The fire-resistance test was based on Australian Standard 1530, Part 4-1979: "Fire Resistance Test of Structures." The fusible link operated satisfactory and the fire damper closed 45 second from the start of the test. The furnace temperature reached 800° C within the first 20 minutes of the test and finally to 1130° C at end of the test (see figure 3). The test was terminated 242 minutes after its commencement and the fire damper remained intact as shown in figure 4d. Figures 4a to 4d show the fire damper condition at the various stages of the test.

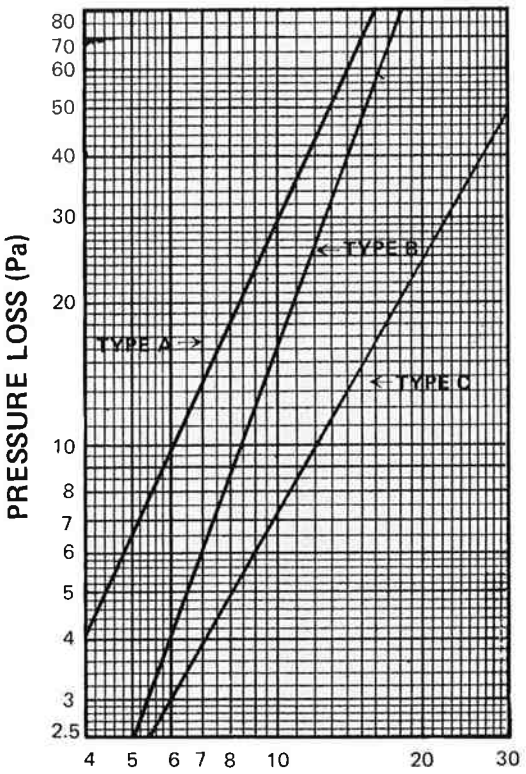


FIGURE 1

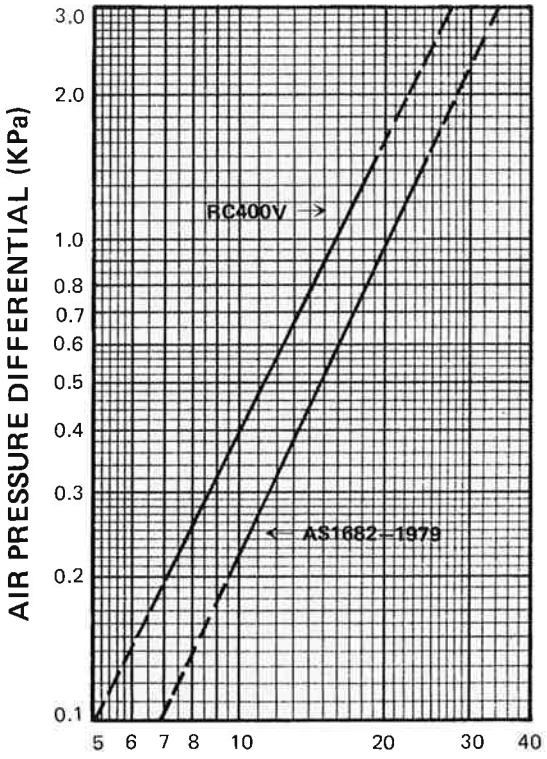


FIGURE 2

FIGURE 1. Pressure Loss For Type A, B and C Fire Damper

FIGURE 2. Air Leakage For RC400V Fire Damper

AIR FLOW TEST

The Model RC400V was tested for airflow and pressure loss according to the British Standard BS1042: " Methods Of Measurement of Fluid Flow In Closed Conduits". Result of test is shown in figure 1. Type C fire damper show exceedingly low pressure loss due to its 100% free area.

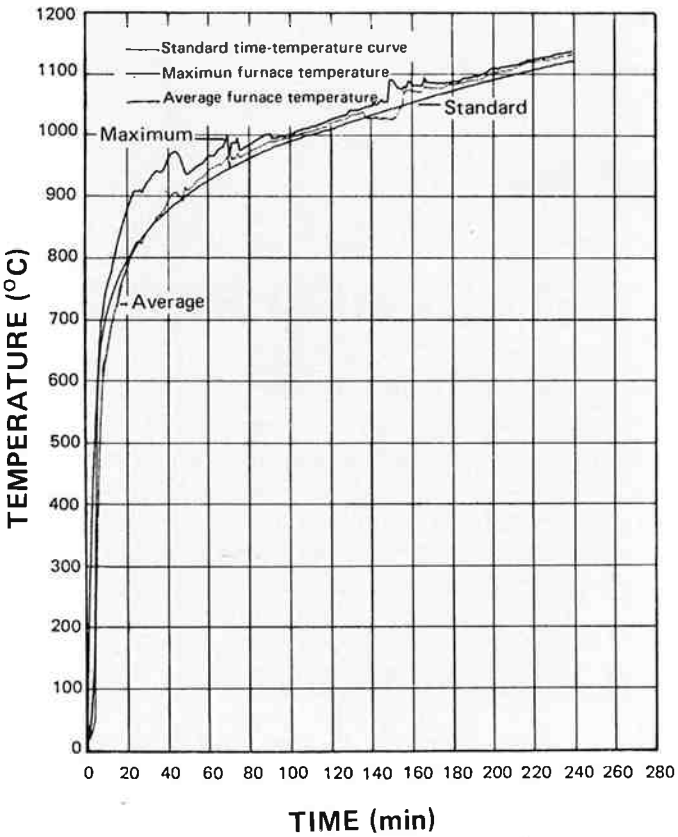


FIGURE 3: Furance Time — Temperature Curves Thermo couples Group 3.02.

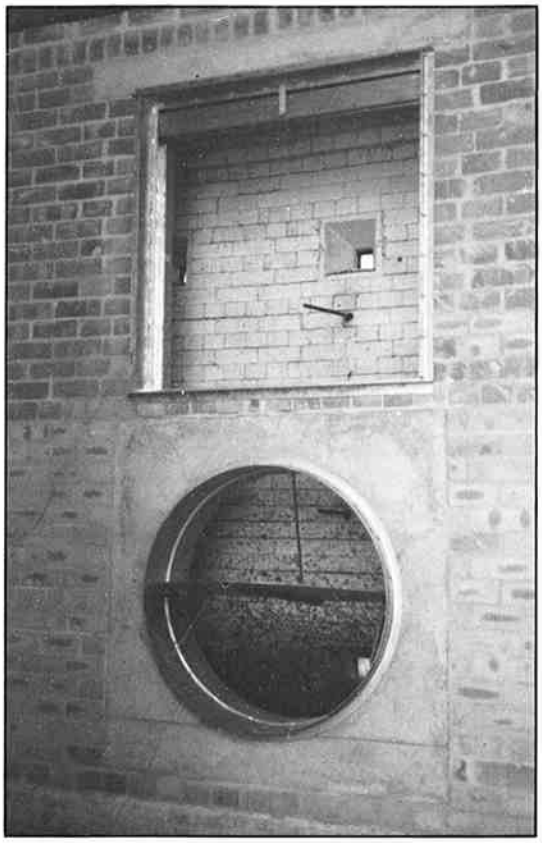


FIG. 4a FIRE DAMPERS BEFORE THE FIRE RESISTANCE TEST

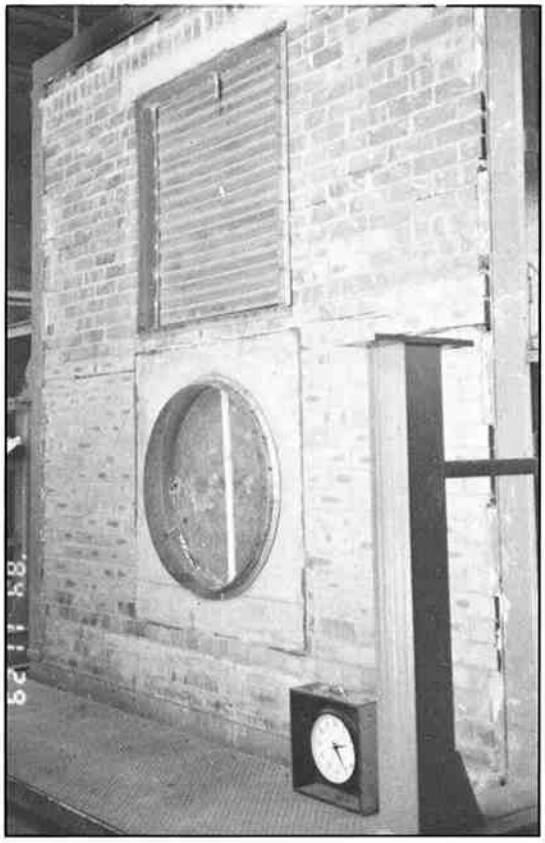


FIG. 4b FIRE DAMPERS 145 MINUTES AFTER THE START OF FIRE RESISTANCE TEST

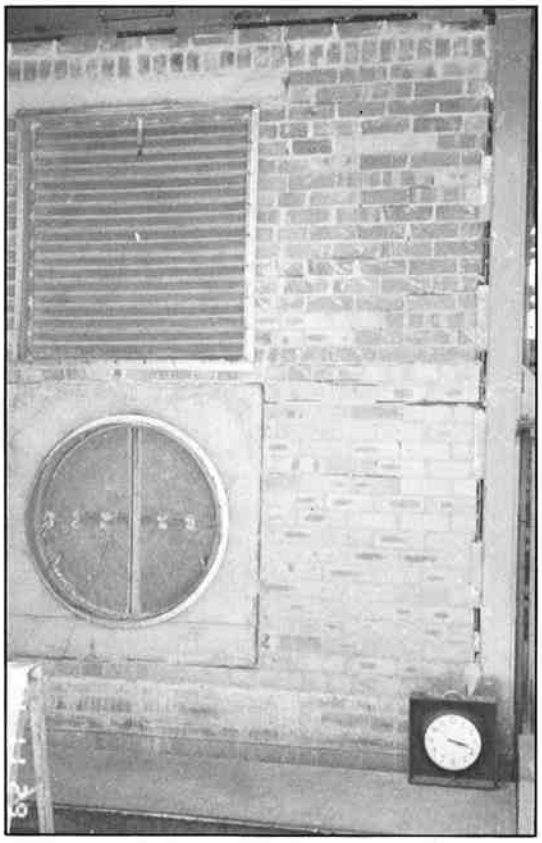


FIG. 4c FIRE DAMPERS 198 MINUTES AFTER THE START OF FIRE RESISTANCE TEST.

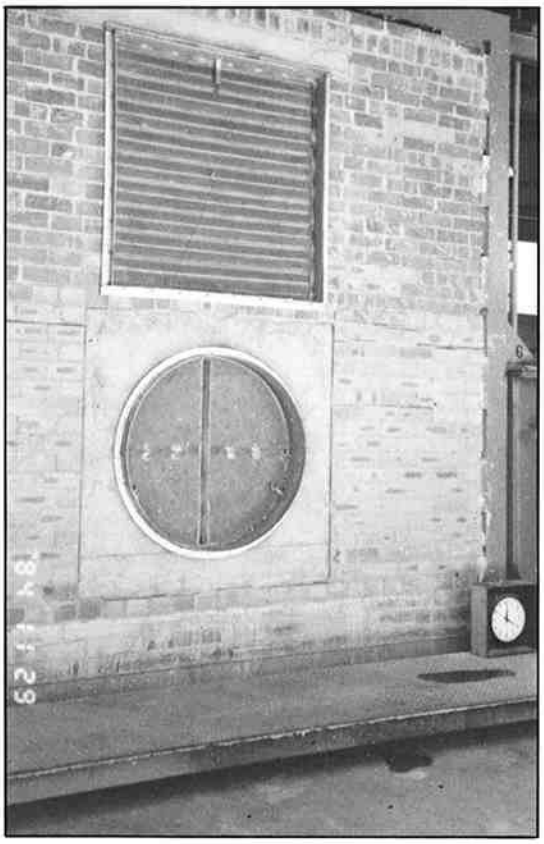
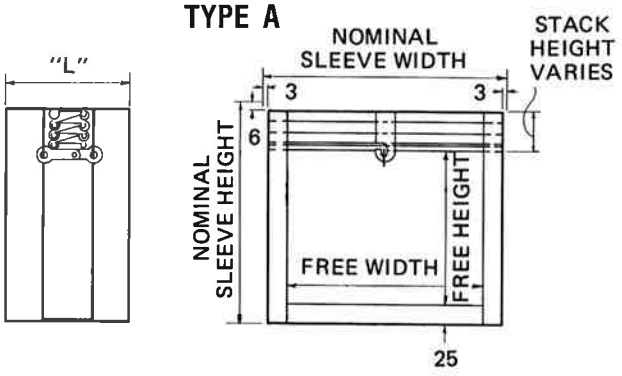


FIG. 4d FIRE DAMPERS 240 MINUTES AFTER THE START OF FIRE RESISTANCE TEST

DIMENSIONAL INFORMATION

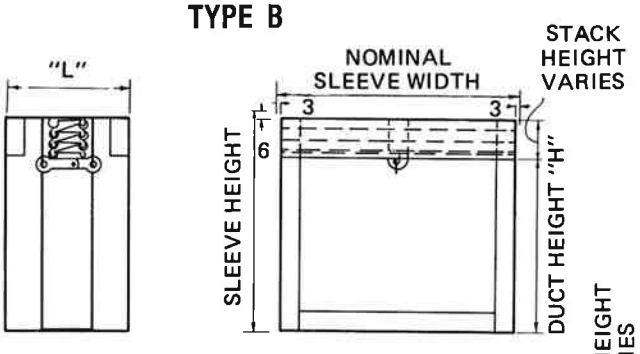
TYPE A



SLEEVE HEIGHT	FREE HEIGHT	SLEEVE HEIGHT	FREE HEIGHT	SLEEVE HEIGHT	FREE HEIGHT
150	86	550	457	950	820
200	136	600	504	1000	876
250	182	650	548	1050	919
300	227	700	598	1100	966
350	273	750	645	1150	1016
400	316	800	689	1200	1059
450	366	850	736	1250	1106
500	413	900	786		

Free width of damper equals A minuts 56 mm

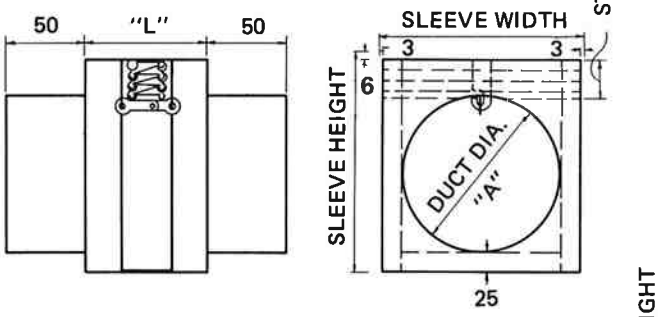
TYPE B



DUCT HEIGHT	SLEEVE HEIGHT	DUCT HEIGHT	SLEEVE HEIGHT	DUCT HEIGHT	SLEEVE HEIGHT
125	161	450	508	800	885
150	186	500	564	850	942
200	239	550	617	900	995
250	294	600	673	950	1052
300	348	650	723	1000	1105
350	405	700	782	1050	1155
400	455	750	835	1100	1212

Nominal sleeve width equal duct width

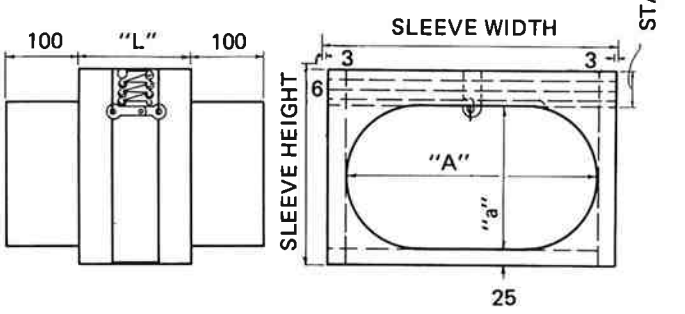
TYPE C ROUND



DUCT DIA.	SLEEVE HEIGHT	DUCT DIA.	SLEEVE HEIGHT	DUCT DIA.	SLEEVE HEIGHT
100	163	450	541	800	912
150	216	500	595	850	970
200	266	550	650	900	1022
250	322	600	700	950	1080
300	375	650	753	1000	1132
350	432	700	810	1050	1189
400	485	750	862	1100	1242

Nominal sleeve width equals duct diameter "A" plus 63 mm

TYPE C FLAT-OVAL or RECTANGULAR



DUCT HEIGHT	SLEEVE HEIGHT	DUCT HEIGHT	SLEEVE HEIGHT	DUCT HEIGHT	SLEEVE HEIGHT
100	163	450	541	800	912
150	216	500	595	850	970
200	266	550	650	900	1022
250	322	600	700	950	1080
300	375	650	753	1000	1132
350	432	700	810	1050	1189
400	485	750	862	1100	1242

Nominal sleeve width equals duct width "A" plus 63 mm

L: Wall thickness + 50 mm for sizes 300 x 300 mm or smaller
Wall thickness + 76 mm for sizes larger than 300 x 300 mm
Minimum 163 mm

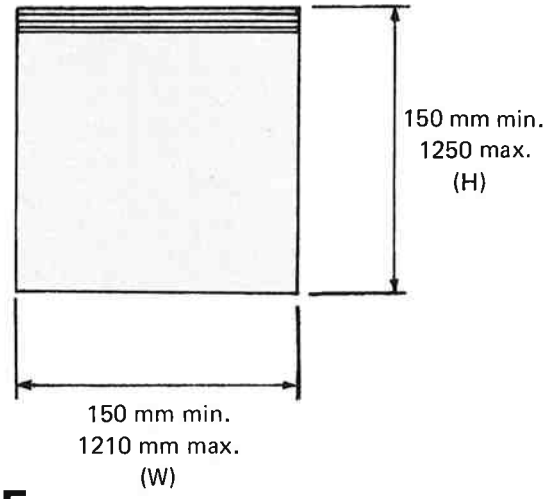
FIRE DAMPER CONFIGURATION

Minimum Size Single Module: 150 x 150 mm
Maximum Size Single Module: 1210 x 1250 mm
Maximum Size Multiple Module: 2420 x 2500 mm

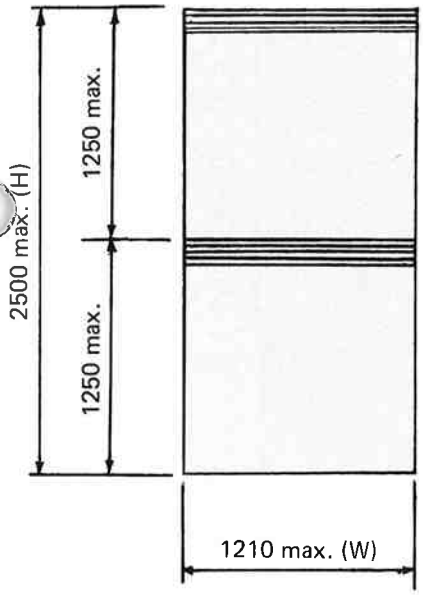
For H larger than 2420 mm
W larger than 2500 mm
} Consult factory

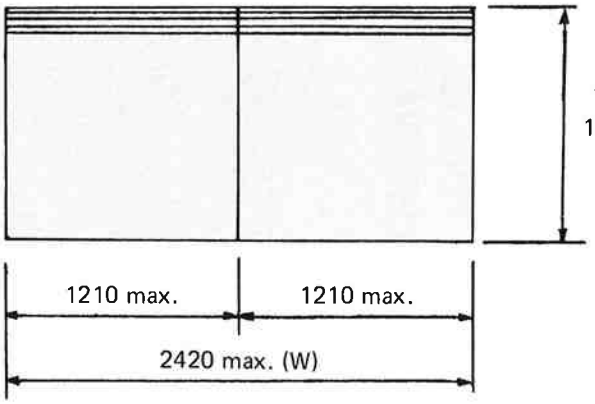
H: Nominal Sleeve Height
W: Nominal Sleeve Width

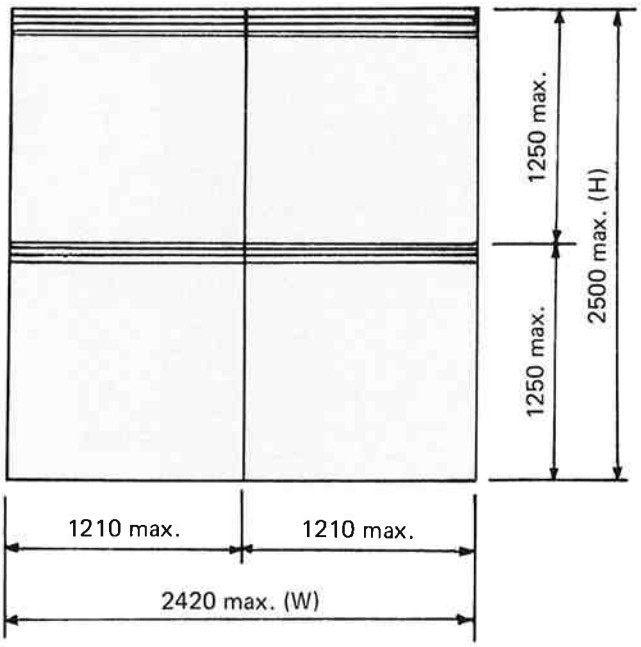
SINGLE MODULE



MULTIPLE MODULE







FIRE DAMPER INSTALLATION

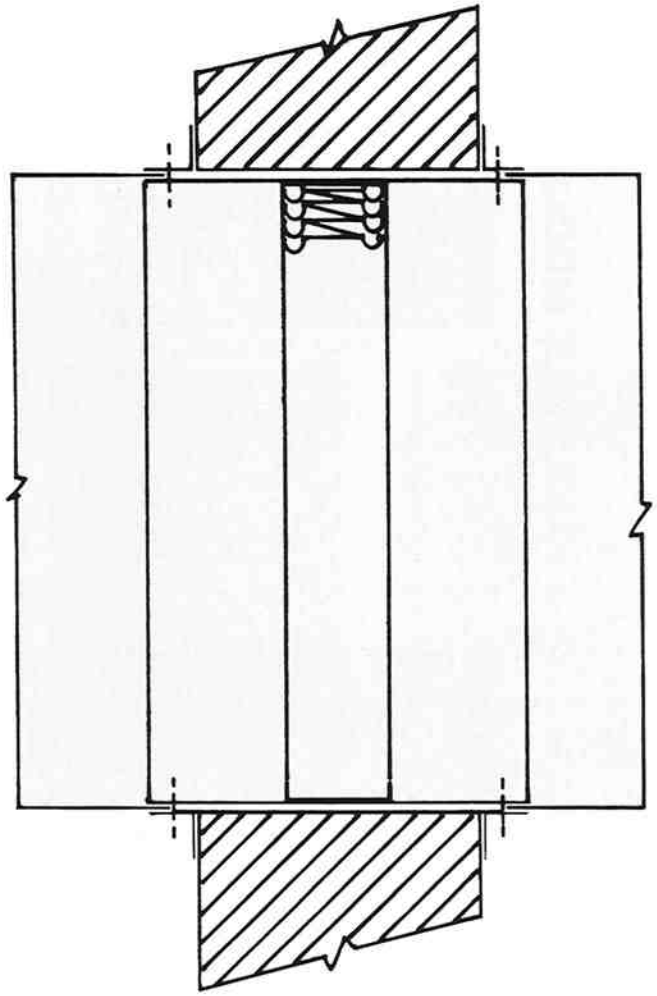
Special attention is needed on the installation of a fire damper. Care should be taken to ensure that the manufacturer installation instructions are strictly adhered to. A fire damper, if not install correctly will fail to function from the early stage of a fire. Installation details and instructions are provided on each of your order for the fire damper. When installing a fire damper the following points should be noted.

1. The wall opening must be larger than the damper by 9 mm for each meter in height and width of the damper to allow for thermal expansion.

2. When the damper is opened the blade assembly must always be positioned at the top.

3. The damper should be positioned in the opening so that the horizontal clearance is equally divided at both sides of the damper.

THIS IS THE WAY

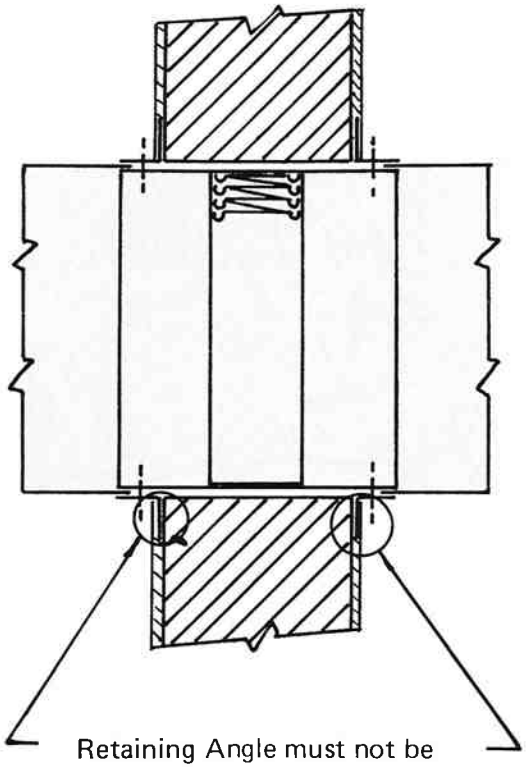


4. Retaining angles are attached to the damper sleeve as shown in the Installation Instructions. They must not be fastened to the wall so that the damper may expand in the presence of fire. Also, they must not be welded together at the corners of the damper.

5. The duct must not continue through the wall opening, but must connect to the damper on both side in such a way that the damper will stay in place at the protected opening even though the duct is disrupted during a fire.

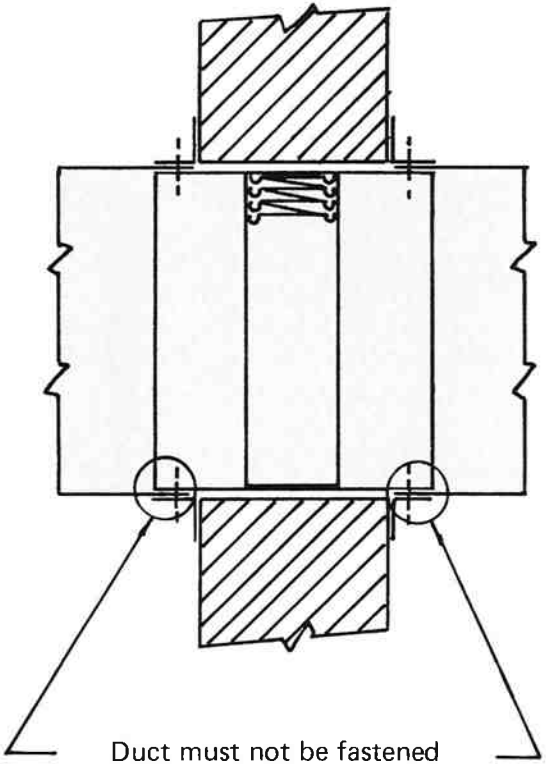
6. If either or both sides of a large damper are exposed (or not duct connected) it is advisable to have the exposed side protected by wire screen to prevent passage of personnel through the damper. This safety precaution will prevent the possibility of personal injury due to the unanticipated closing of the damper.

NOT THIS WAY



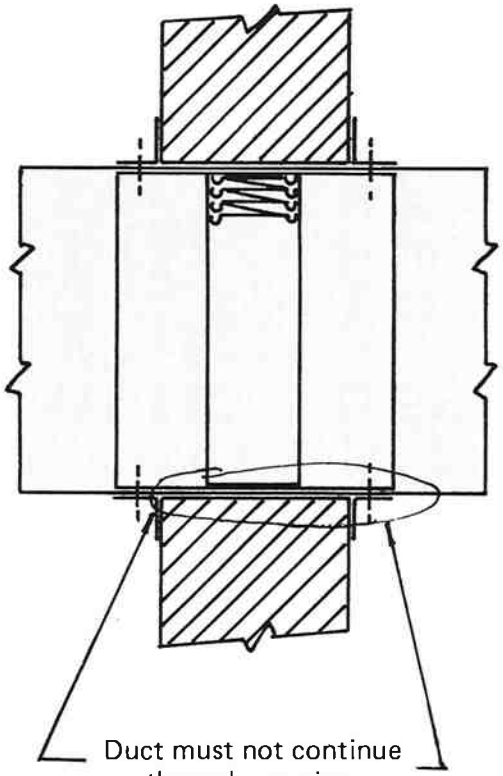
Retaining Angle must not be fastened in plaster or bolted to the wall.

NOT THIS WAY



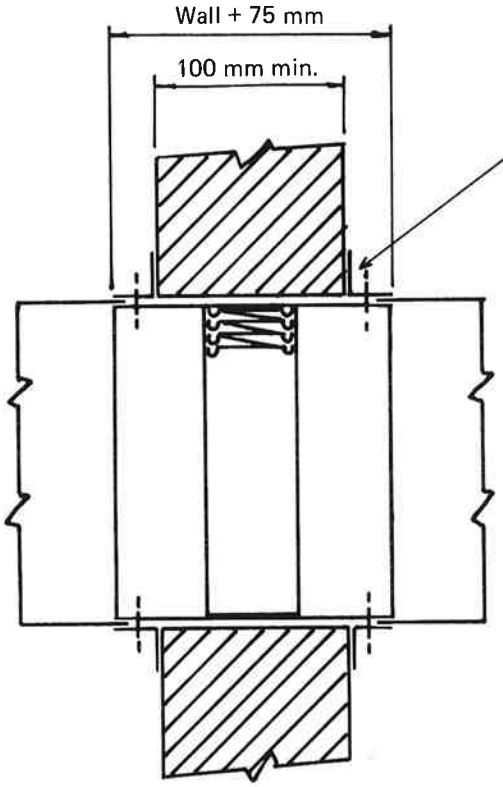
Duct must not be fastened to the damper sleeve with bolt and nut.

NOT THIS WAY

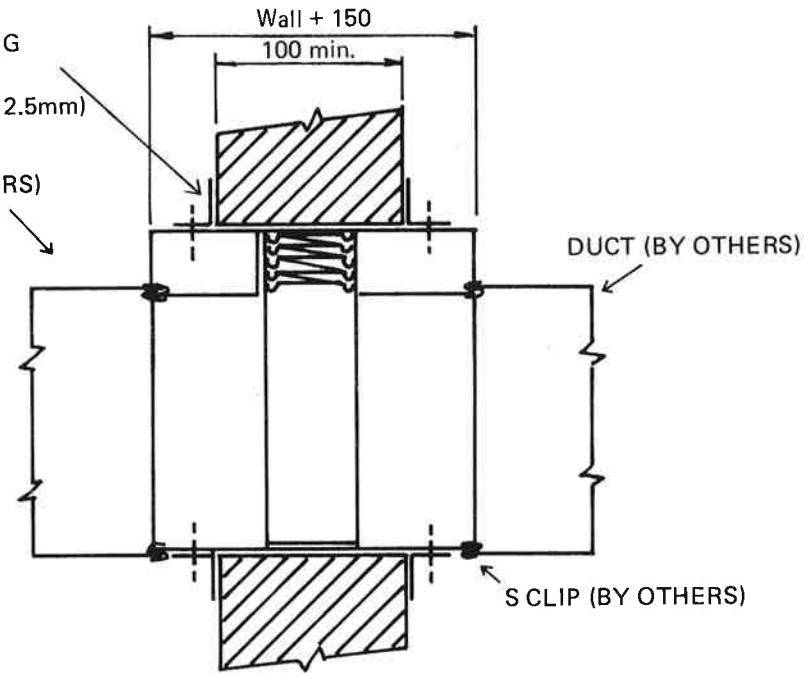


Duct must not continue through opening.

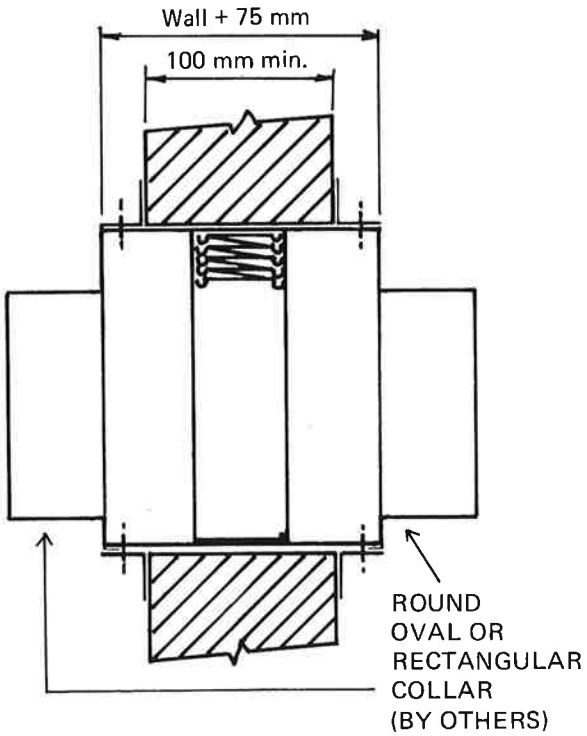
MOUNTING DETAILS



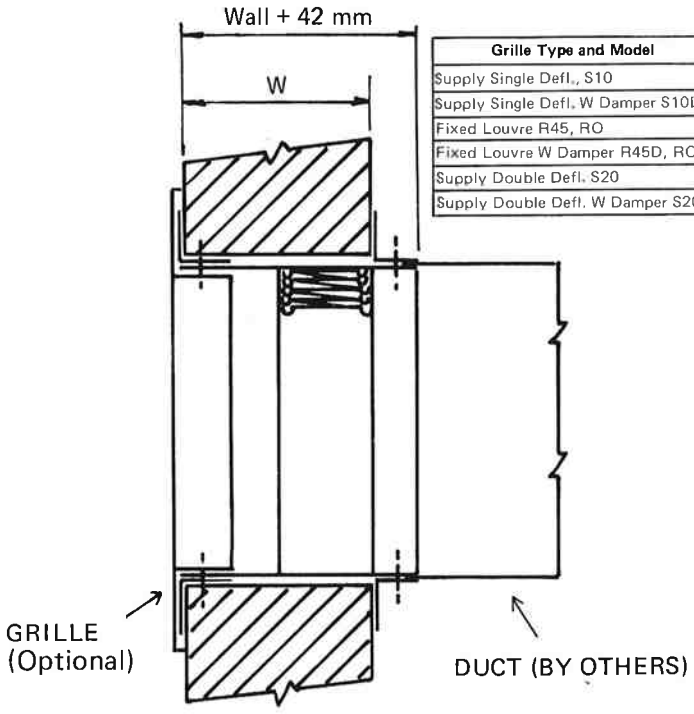
TYPE N



TYPE S



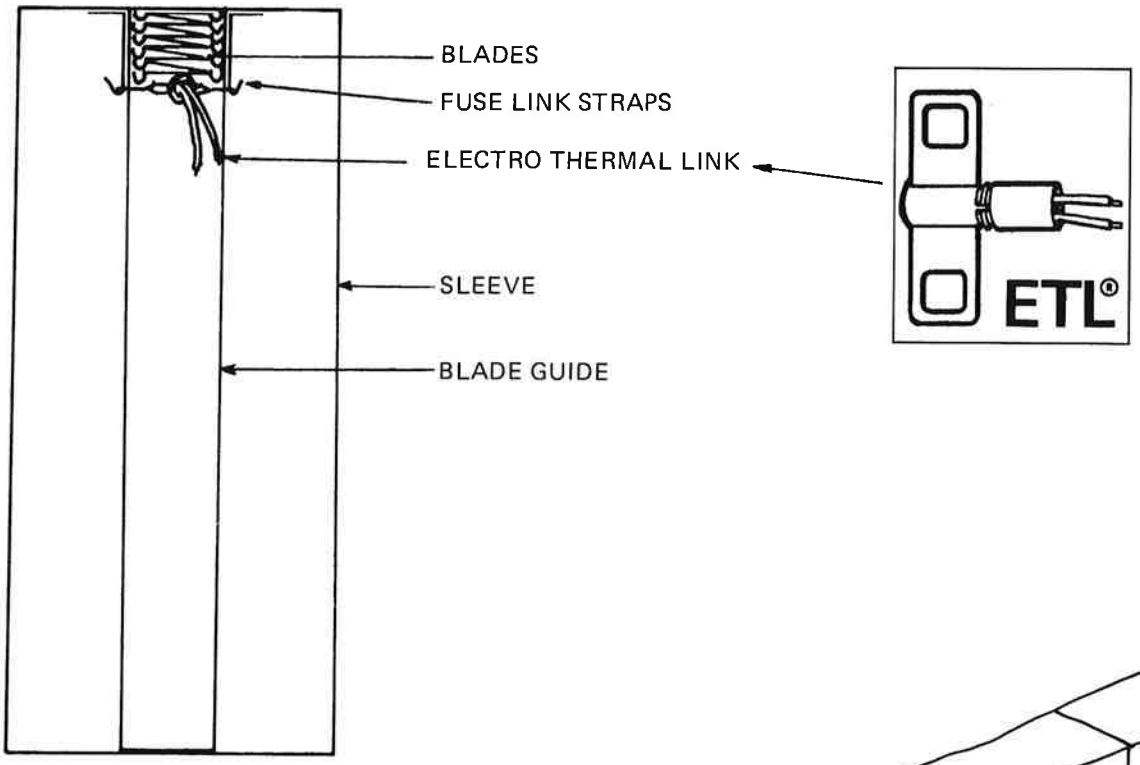
TYPE R

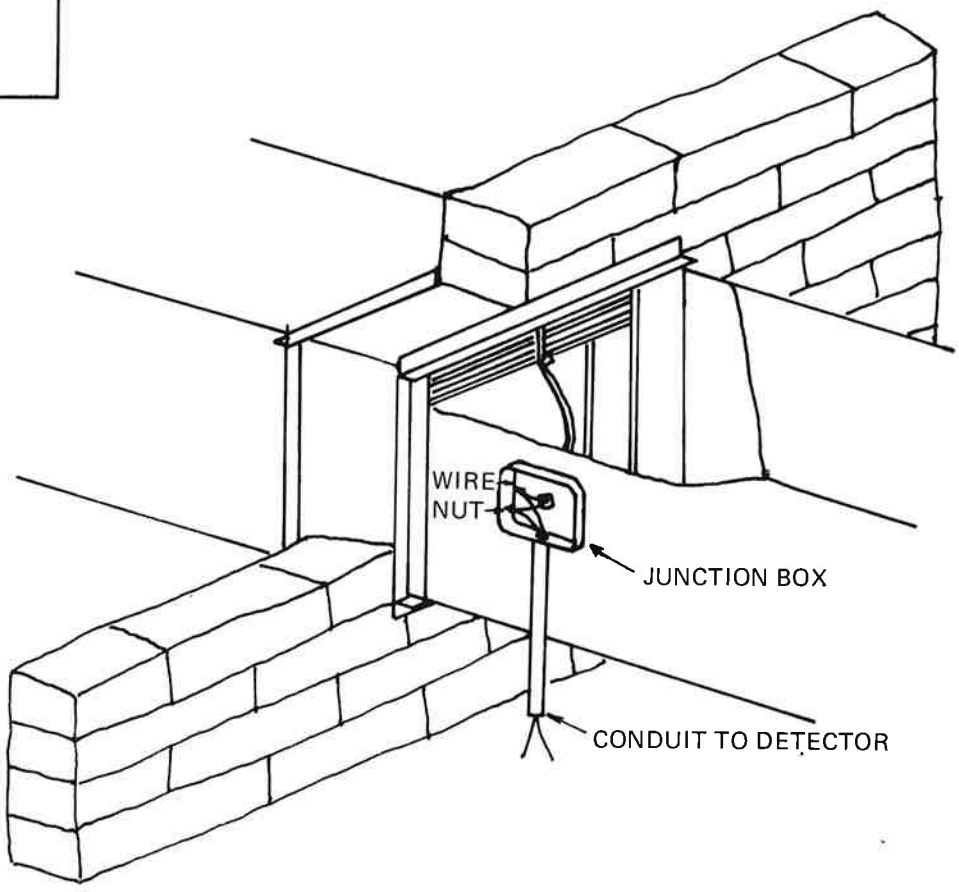


Grille Type and Model	W(wall)
Supply Single Defl., S10	125
Supply Single Defl. W Damper S10D	165
Fixed Louvre R45, RO	125
Fixed Louvre W Damper R45D, ROD	165
Supply Double Defl. S20	150
Supply Double Defl. W Damper S20D	190

TYPE N WITH GRILLE

FIRE SMOKE DAMPERS
ELECTRO THERMAL LINK ETL ACTUATION





INSTALLATION DETAIL

ORDERING INFORMATION

Fire Damper Models can be ordered as follows:

1. With or without SISIR label.
2. Type A for use in low velocity rectangular duct-work.
3. Type B for use similar to Type A, except where it is desired to keep the blade stack out or the air stream.
4. Type C, Round, is for use in round duct systems.
5. Type C, Flat Oval, is for use in flat oval duct systems.
6. Type C, Rectangular, is for use where the rectangular configuratrion is needed, but where 100% free area is desired.

The order must specify the following:

1. Model follow by the type
   400V-A
   400V-B
   400V-C Round
   400V-C Flat Oval
   400V-C Rectangular
2. Size, identifying width, height, depth
3. Depth of sleeve L (or wall thickness)
4. Size of connecting duct if type C is specified.

SPECIFICATION

Fire dampers shall be tested in accordance with Australia standard AS 1682-1974 for air leakage and AS1530 Part 4-1979 for fire resistance and shall maintain their integrity for a period of 4-hours. Fire damper shall be of the low leakage type. Air leakage shall not exceed 23 cubic metre per minute per square metre at 1.25 KPa differential pressure. Test Data of air leakage from a recognised laboratory must be submitted for approval. Fire dampers shall be installed as indicated and to the requirements of the local fire regulations. All dampers shall be of robust construction. Sleeve shall be fully arc welded assembly of 2.5 mm galvanised steel. Tack welding is not acceptable. Roll formed inter-locking blades shall be of 1.0mm galvanised steel. Blade guides constructed of 1.2mm galvanised steel shall be welded to the sleeve to permit greater damper rigidity. All fire dampers shall be model RC400V as manufactured by Ong Leong Seng Enterprise Pte. Ltd.

OLS Manufacturing Co. Pte Ltd
3-B Joo Koon Circle, Singapore 629034.
Tel : (65) 6861 5253 Fax : (65) 6861 9850
Email : enquiry@connols-air.com
Website - http://www.connols-air.com