



**COMBINATION FIRE/SMOKE DAMPER**  
**VERTICAL AIRFOIL BLADE**  
 1 1/2 HR. LABEL • ULTRA-LOW LEAKAGE  
 HIGH PERFORMANCE  
**MODEL: 1221VB (TYPE A WITH SLEEVE)**



**QUALIFICATIONS:**

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER** 1 1/2 hr. Label (File #'s R9492 & R19569).
- **UL 555S & CAN/ULC-S112.1 CLASSIFIED SMOKE DAMPER** Leakage Class I or II at 250°F elevated temperature (File # R9492).
- **City of New York. MEA #366-03-M.**
- **California State Fire Marshal: Fire Damper Listing No. 3225-0935:106.**
- **Meets NFPA 80, 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **Maximum velocity: 2000 fpm @ 4" w.g.**

Model 1221VB (Vertical Blade) is a high performance combination fire/smoke damper that provides superior protection and versatility. The vertical blade configuration allows for the actuator to be mounted below the damper and is ideal for applications where bottom access is desired or where there isn't space for a side mounted actuator.

The 1221VB Series dampers are ideal for applications where building codes require both a fire damper for the protection of ductwork penetrations in walls that have a fire resistance rating of up to 2 hours and also require a leakage rated damper for operational smoke control in static or dynamic smoke management systems.

The 1221VB Series has been especially designed and tested to provide premium performance. It offers the lowest leakage class available and is qualified for installation with airflow in either direction. Airfoil blade design and elimination of blade sills provide a low pressure drop design.

Unique, inter-locking double skin blade design provides flame and smoke seal under fire conditions at temperatures up to 2000°F.

**STANDARD SPECIFICATION:**

**Frame:** 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.

**Blades:** 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.

**Linkage:** Concealed in frame. 12 ga. (2.7) plated steel.

**Bearings:** 1/2" (13) dia. self-lubricating oilite bronze.

**Axles:** 1/2" (13) dia. plated steel double bolted to blades.

**Jackshaft:** 1/2" (13) dia. cadmium plated steel.

**Jamb Seals:** Stainless steel.

**Heat Responsive Device (Controlled Closure):**

250°F (121°C) standard. 165°F (74°C) and 212°F (100°C) available. ERL (Electric Resettable Link) is standard on all dampers with electric actuators.

**Sizes (Damper W x H):**

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum	Maximum
		Single Section Vertical	Single Section Vertical
24	250	8" x 8" (203 x 203)	48" x 36" (1219 x 914)

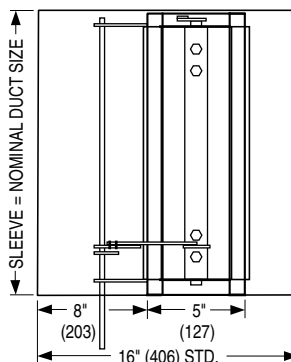
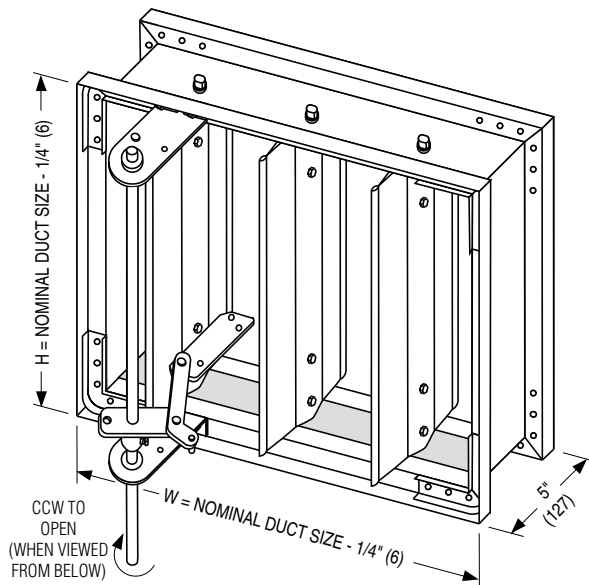
**Notes:**

1. Dampers with duct heights less than 8" (203) require a Type 'B' sleeve enclosure (Model 1222VB). Duct sizes less than 8" (203) in width require a Type 'C' enclosure (Model 1223VB).

2. Multiple Section Assemblies are not permitted.

**BASE MODEL SELECTION:**

- 1221VB** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1221VB** Non-standard sleeve. Specify \_\_\_\_\_ length \_\_\_\_\_ ga. Available up to 36" (914) dependent upon wall thickness and 10 through 20 ga. (3.5 through 1.0).



Wall Thickness	Minimum Sleeve Length
4 (102)	16 (406)
8 (203)	20 (508)
12 (305)	24 (610)
16 (406)	28 (711)

**LEAKAGE CLASS/ELEVATED TEMPERATURE:**

I  II @ 250°F

**DYNAMIC VELOCITY/PRESSURE RATING:**

24 2000 fpm @ 4" w.g.

**ACTUATOR SELECTION:** Electric.

**ACTUATOR LOCATION:** External, bottom mount.

**ACTUATOR FAIL POSITION:** Closed.

**OPTIONS:**

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack
- MLS-400** Electric Fire Sensor (Re-openable control system). Includes dual heat sensors (165°F and 250°F) and position indicator switch pack.
- QS1** Quick-set retaining angle (one side)
- QS2** Quick-set retaining angles (two sides)
- TDF1** Flange (one end) } (22 or 20 ga. sleeves only)
- TDF2** Flange (both ends) }

**SCHEDULE TYPE:**

**PROJECT:**

**ENGINEER:**

**CONTRACTOR:**

For installation instructions, see IOM-1220VBINST.  
 Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
10 - 16 - 24	1200	5 - 7 - 12	1220VB-1



**COMBINATION FIRE/SMOKE DAMPER**  
**VERTICAL AIRFOIL BLADE**  
**1 1/2 HOUR LABEL • ULTRA-LOW LEAKAGE**  
**HIGH PERFORMANCE**  
**MODEL: 1222VB (TYPE B SLEEVE ENCLOSURE)**



**FOR DUCTS UNDER 8" (203) IN HEIGHT AND 8" (203) OR MORE IN WIDTH**

**QUALIFICATIONS:**

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER** 1 1/2 hr. Label (File #'s R9492 & R19569).
- **UL 555S & CAN/ULC-S112.1 CLASSIFIED SMOKE DAMPER** Leakage Class I or II at 250°F elevated temperature (File # R9492).
- **Meets NFPA 80, 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **California State Fire Marshal Listing No. 03230-0935:106.**
- **City of New York. MEA # 366-03-M.**
- **Maximum velocity: 2000 fpm @ 4" w.g.**

Model 1222VB (Vertical Blade) is a high performance combination fire/smoke damper that provides superior protection and versatility. The vertical blade configuration allows for the actuator to be mounted below the damper and is ideal for applications where bottom access is desired or where there isn't space for a side mounted actuator.

The 1220VB Series dampers are ideal for applications where building codes require both a fire damper for the protection of ductwork penetrations in walls that have a fire resistance rating of up to 2 hours and also require a leakage rated damper for operational smoke control in static or dynamic smoke management systems.

The 1220VB Series has been especially designed and tested to provide premium performance. It offers the lowest leakage class available and is qualified for installation with airflow in either direction. Airfoil blade design and elimination of blade sills provide a low pressure drop design.

Unique, inter-locking double skin blade design provides flame and smoke seal under fire conditions at temperatures up to 2000°F.

**STANDARD SPECIFICATION:**

- Frame:** 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.  
**Blades:** 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.  
**Linkage:** Concealed in frame. 12 ga. (2.7) plated steel.  
**Bearings:** 1/2" (13) dia. self-lubricating oilite bronze.  
**Axles:** 1/2" (13) dia. plated steel double bolted to blades.  
**Jackshaft:** 1/2" (13) dia. cadmium plated steel.  
**Jamb Seals:** Stainless steel.

**Heat Responsive Device (Controlled Closure):**

250°F (121°C) standard. 165°F (74°C) and 212°F (100°C) available.  
 ERL (Electric Resettable Link) is standard on all dampers with electric actuators.

**Sizes (Duct W x H):**

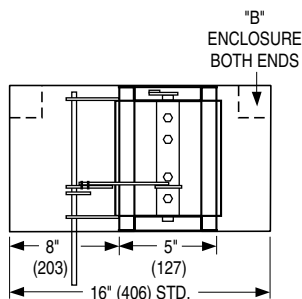
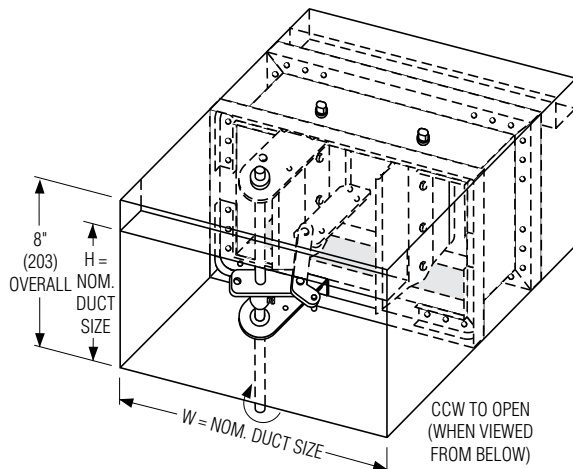
Velocity/ Pressure Rating	Elevated Temp. °F	Minimum	Maximum
		Single Section Vertical	Single Section Vertical
24	250	8" x 4" (203 x 102) (overall damper height is 8" [203]).	48" x 7 1/2" (1219 x 191)

**Notes:**

1. Duct sizes less than 8" (203) in width require a Type 'C' enclosure (Model 1223VB).
2. Multiple Section Assemblies are not permitted.

**SLEEVE/ENCLOSURE SELECTION:**

- 1222VB** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1222VB** Non-standard sleeve. Specify \_\_\_\_\_ length \_\_\_\_\_ ga. Available up to 36" (914) dependent upon wall thickness and 10 through 20 ga. (3.5 through 1.0).



Wall Thickness	Minimum Sleeve Length
4 (102)	16 (406)
8 (203)	20 (508)
12 (305)	24 (610)
16 (406)	28 (711)

**LEAKAGE CLASS/ELEVATED TEMPERATURE:**

I  II @ 250°F

**DYNAMIC VELOCITY/PRESSURE RATING:**

24 2000 fpm @ 4" w.g.

**ACTUATOR SELECTION: Electric.**

**ACTUATOR LOCATION: External, bottom mount.**

**ACTUATOR FAIL POSITION: Closed.**

**OPTIONS:**

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack
- MLS-400** Electric Fire Sensor (Re-openable control system). Includes dual heat sensors (165°F and 250°F) and position indicator switch pack.
- QS1** Quick-set retaining angle (one side)
- QS2** Quick-set retaining angles (two sides)

**SCHEDULE TYPE:**

**PROJECT:**

**ENGINEER:**

**CONTRACTOR:**

For installation instructions, see IOM-1220VBINST.  
 Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
10 - 16 - 24	1200	5 - 7 - 12	1220VB-2



**COMBINATION FIRE/SMOKE DAMPER**  
**VERTICAL AIRFOIL BLADE**  
**HIGH PERFORMANCE**  
**1 1/2 HR. LABEL • ROUND DUCT CONNECTION**  
**MODEL: 1223VB (TYPE C SLEEVE ENCLOSURE)**



**QUALIFICATIONS:**

- **UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER** 1 1/2 hr. Label (File #'s R9492 & R19569).
- **UL 555S & CAN/ULC-S112.1 CLASSIFIED SMOKE DAMPER** Leakage Class I or II at 250°F elevated temperature (File # R9492).
- **Meets NFPA 80, 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.**
- **California State Fire Marshal Listing No. 03230-0935:106.**
- **City of New York. MEA # 366-03-M.**
- **Maximum velocity: 2000 fpm @ 4" w.g.**

Model 1223VB (Vertical Blade) is a high performance combination fire/smoke damper that provides superior protection and versatility. The vertical blade configuration allows for the actuator to be mounted below the damper and is ideal for applications where bottom access is desired or where there isn't space for a side mounted actuator.

The 1220VB Series dampers are ideal for applications where building codes require both a fire damper for the protection of ductwork penetrations in walls that have a fire resistance rating of up to 2 hours and also require a leakage rated damper for operational smoke control in static or dynamic smoke management systems.

The 1220VB Series has been especially designed and tested to provide premium performance. It offers the lowest leakage class available and is qualified for installation with airflow in either direction. Airfoil blade design and elimination of blade sills provide a low pressure drop design.

Unique, inter-locking double skin blade design provides flame and smoke seal under fire conditions.

**STANDARD SPECIFICATION:**

- Frame:** 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.  
**Blades:** 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.  
**Linkage:** Concealed in frame. 12 ga. (2.7) plated steel.  
**Bearings:** 1/2" (13) dia. self-lubricating oilite bronze.  
**Axles:** 1/2" (13) dia. plated steel double bolted to blades.  
**Jackshaft:** 1/2" (13) dia. cadmium plated steel.  
**Jamb Seals:** Stainless steel.

**Heat Responsive Device (Controlled Closure):**

250°F (121°C) standard. 165°F (74°C) and 212°F (100°C) available.  
 ERL (Electric Resettable Link) is standard on all dampers with electric actuators.

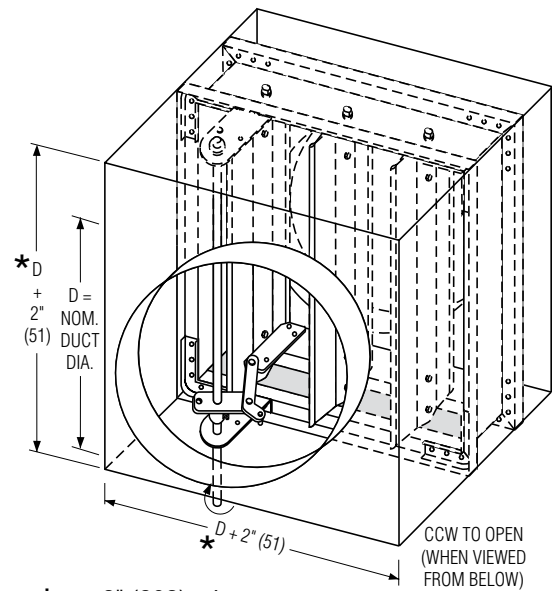
**Sizes (Duct Diameter):**

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum	Maximum
		Single Section Vertical	Single Section Vertical
24	250	4" (102) dia. (overall damper size is 8" x 8" [203 x 203]).	34" (864) dia.

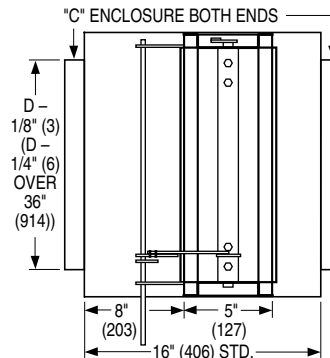
**Note:** Multiple Section Assemblies are not permitted.

**SLEEVE/ENCLOSURE SELECTION:**

- 1223VB** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1223VB** Non-standard sleeve. Specify \_\_\_\_\_ length \_\_\_\_\_ ga. Available up to 36" (914) dependent upon wall thickness and 10 through 20 ga. (3.5 through 1.0).



\* or 8" (203) min.



Wall Thickness	Minimum Sleeve Length
4 (102)	16 (406)
8 (203)	20 (508)
12 (305)	24 (610)
16 (406)	28 (711)

**LEAKAGE CLASS/ELEVATED TEMPERATURE:**

- I  II @ 250°F

**DYNAMIC VELOCITY/PRESSURE RATING:**

24 2000 fpm @ 4" w.g.

**ACTUATOR SELECTION:** Electric.

**ACTUATOR LOCATION:** External, bottom mount.

**ACTUATOR FAIL POSITION:** Closed.

**OPTIONS:**

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack
- MLS-400** Electric Fire Sensor (Re-openable control system). Includes dual heat sensors (165°F and 250°F) and position indicator switch pack.
- QS1** Quick-set retaining angle (one side)
- QS2** Quick-set retaining angles (two sides)

**SCHEDULE TYPE:**

**PROJECT:**

**ENGINEER:**

**CONTRACTOR:**

For installation instructions, see IOM-1220VBINST.  
 Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
10 - 16 - 24	1200	5 - 7 - 12	1220VB-3



**COMBINATION FIRE/SMOKE DAMPER**  
**VERTICAL AIRFOIL BLADE**  
**HIGH PERFORMANCE • 1 1/2 HR. LABEL**  
**SQUARE, RECT. OR OVAL DUCT CONNECTION**  
**MODEL: 1223VB (TYPE C SLEEVE ENCLOSURE)**



**QUALIFICATIONS:**

- UL 555 & CAN/ULC-S112 CLASSIFIED DYNAMIC FIRE DAMPER 1 1/2 hr. Label (File #'s R9492 & R19569).
- UL 555S & CAN/ULC-S112.1 CLASSIFIED SMOKE DAMPER Leakage Class I or II at 250°F elevated temperature (File # R9492).
- Meets NFPA 80, 90A, 92A, 92B, 101 and 105 as well as IBC and NBC (Canada) Building Code requirements.
- California State Fire Marshal Listing No. 03230-0935:106.
- City of New York. MEA # 366-03-M.
- Maximum velocity: 2000 fpm @ 4" w.g.

Model 1223VB (Vertical Blade) is a high performance combination fire/smoke damper that provides superior protection and versatility. The vertical blade configuration allows for the actuator to be mounted below the damper and is ideal for applications where bottom access is desired or where there isn't space for a side mounted actuator.

The 1220VB Series dampers are ideal for applications where building codes require both a fire damper for the protection of ductwork penetrations in walls that have a fire resistance rating of up to 2 hours and also require a leakage rated damper for operational smoke control in static or dynamic smoke management systems.

The 1220VB Series has been especially designed and tested to provide premium performance. It offers the lowest leakage class available and is qualified for installation with airflow in either direction. Airfoil blade design and elimination of blade sills provide a low pressure drop design.

Unique, inter-locking double skin blade design provides flame and smoke seal under fire conditions at temperatures up to 2000°F.

**STANDARD SPECIFICATION:**

- Frame:** 5" x 7/8" x 16 ga. (127 x 22 x 1.6) galvanized steel hat channel.  
**Blades:** 14 ga. (2.0) equivalent galvanized steel formed airfoil on 5 1/2" (140) centers. Opposed action.  
**Linkage:** Concealed in frame. 12 ga. (2.7) plated steel.  
**Bearings:** 1/2" (13) dia. self-lubricating oilite bronze.  
**Axles:** 1/2" (13) dia. plated steel double bolted to blades.  
**Jackshaft:** 1/2" (13) dia. cadmium plated steel.  
**Jamb Seals:** Stainless steel.

**Heat Responsive Device (Controlled Closure):**

250°F (121°C) standard. 165°F (74°C) and 212°F (100°C) available.  
 ERL (Electric Resettable Link) is standard on all dampers with electric actuators.

**Sizes (Duct W x H):**

Velocity/ Pressure Rating	Elevated Temp. °F	Minimum	Maximum
		Single Section Vertical	Single Section Vertical
24	250	4" x 4" (102 x 102) (overall damper size is 8" x 8" [203 x 203] min.).	46" x 34" (1168 x 864)

**Note:** Multiple Section Assemblies are not permitted.

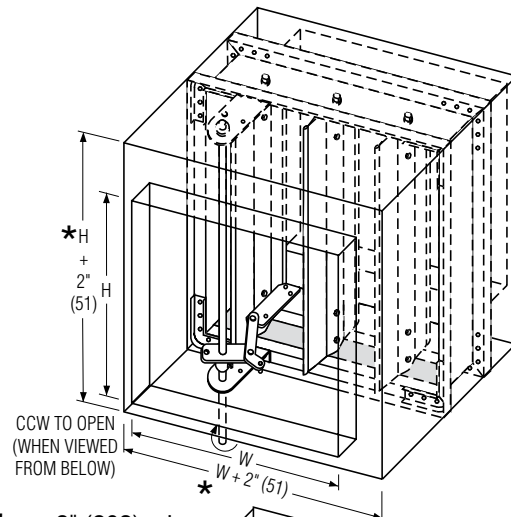
**SLEEVE/ENCLOSURE SELECTION:**

- 1223VB** Standard factory sleeve (caulked to UL requirements) 16" long x 20 ga. (406 x 1.0).
- 1223VB** Non-standard sleeve. Specify \_\_\_\_\_ length \_\_\_\_\_ ga. Available up to 36" (914) dependent upon wall thickness and 10 through 20 ga. (3.5 through 1.0).

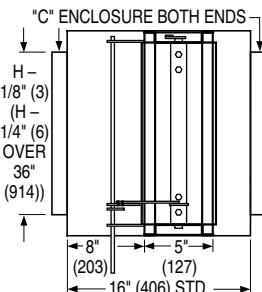
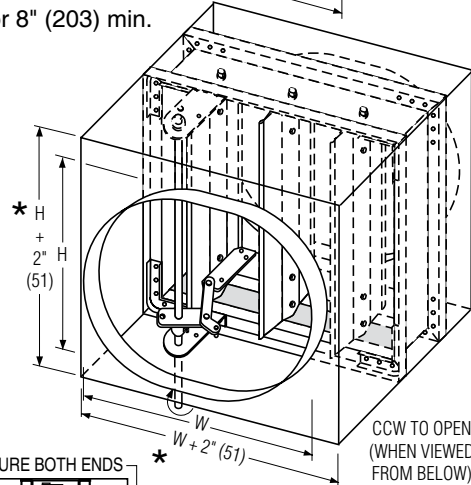
**LEAKAGE CLASS/ELEVATED TEMPERATURE:**

- I  II @ 250°F

**DYNAMIC VELOCITY/PRESSURE RATING: 24** 2000 fpm @ 4" w.g.



\* or 8" (203) min.



Wall Thickness	Minimum Sleeve Length
4 (102)	16 (406)
8 (203)	20 (508)
12 (305)	24 (610)
16 (406)	28 (711)

**ACTUATOR SELECTION: Electric.**

**ACTUATOR LOCATION: External, bottom mount.**

**ACTUATOR FAIL POSITION: Closed.**

**OPTIONS:**

- BS** Stainless steel bearings
- MLS-300** Position indicator switch pack
- MLS-400** Electric Fire Sensor (Re-openable control system). Includes dual heat sensors (165°F and 250°F) and position indicator switch pack.
- QS1** Quick-set retaining angle (one side)
- QS2** Quick-set retaining angles (two sides)

For installation instructions, see IOM-1220VBINST.  
 Dimensions are in inches (mm).

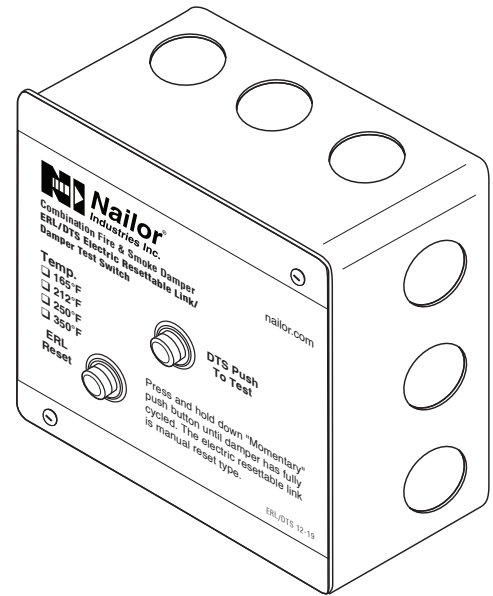
<b>SCHEDULE TYPE:</b>				
<b>PROJECT:</b>				
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR:</b>	10 - 16 - 24	1200	5 - 7 - 12	1220VB-4



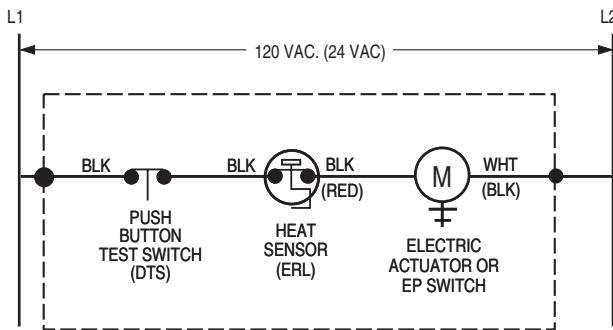
The DTS (Damper Test Switch) is an optional "momentary" push button test switch available on all Nailor smoke and combination fire/smoke dampers. The DTS provides the ability to "cycle test" the damper by pushing and holding down the button until the damper has cycled and closure has been visually verified, either by inspecting the damper through the access door or by confirmation at a remote control panel when equipped with the optional MLS-300 position indicator.

The DTS is mounted right on the damper and enables a single maintenance person to test and cycle the damper, eliminating the need for help from another person in the control room.

When a combination fire/smoke damper is ordered, the DTS is combined with the ERL (Electric Resettable Link), in a common enclosure.



### WIRING DIAGRAMS:

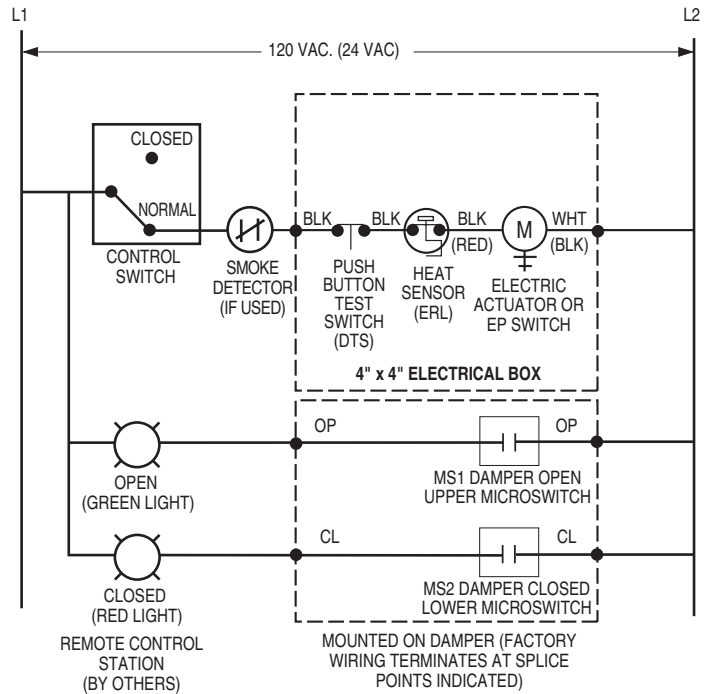


MOUNTED ON DAMPER (FACTORY WIRING TERMINATES AT SPLICE POINTS INDICATED INSIDE 4" x 4" ELECTRICAL BOX)

**Figure 1. DTS/ERL Damper Test Switch with Electric Resettable Link**

### Belimo Actuator Aux. Switch Wiring Connections

Model Series	Open (OP)	Closed (CL)
FSTF	Orange / Gray	Violet / Red
FSLF / FSAFA	Gray / Gray	Violet / Violet
FSNF / FSAFB	White S4 / S6	White S1 / S2



**Figure 2. DTS/ERL with MLS-300 Belimo (actuator aux. switches) Position Indicator Package**

SCHEDULE TYPE

PROJECT

ENGINEER

CONTRACTOR

DATE

B SERIES

SUPERSEDES

DRAWING NO.

9 - 3 - 20

FD-ACC

3 - 29 - 18

DTS

## WIRING DIAGRAMS:

### Honeywell Actuator Aux. Switch Wiring Connections

Model Series	Open (OP)	Closed (CL)
MSXX04	Yellow / Yellow	Blue / Blue
MSXX20	Yellow / Yellow	Blue / Blue

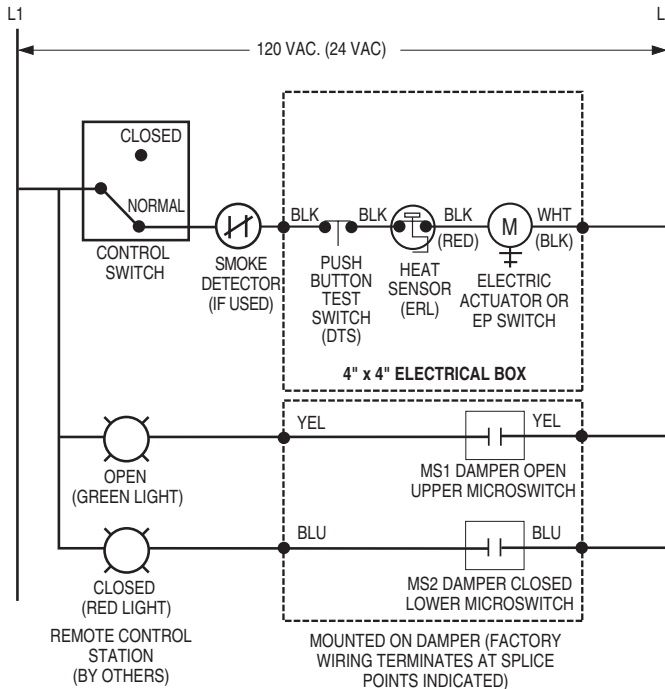


Figure 3. DTS/ERL with MLS-300 Nailor or Honeywell (actuator aux. switches) Position Indicator Package

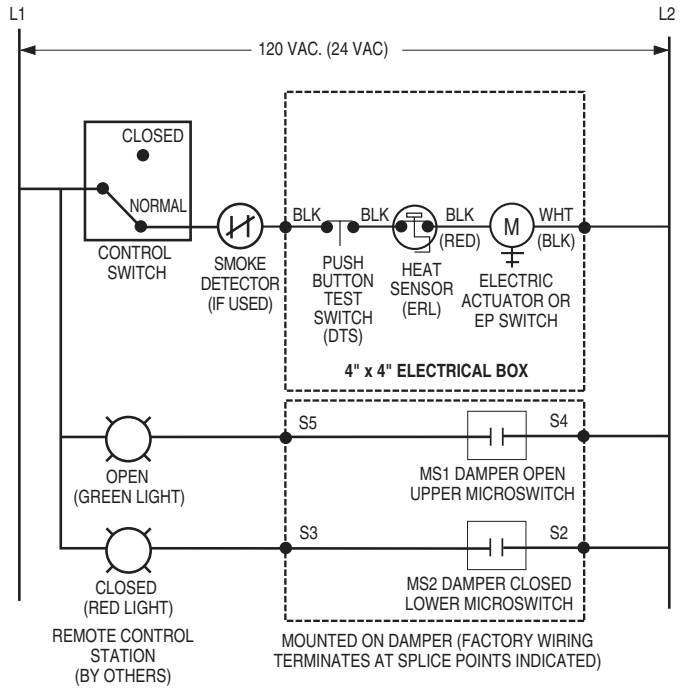
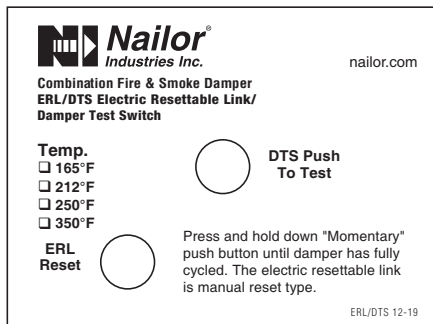
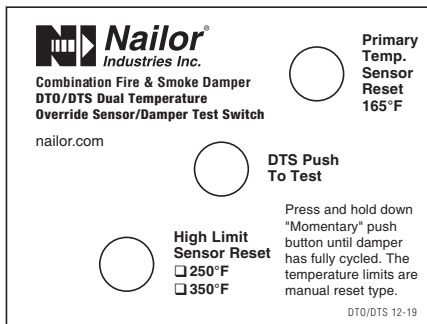


Figure 4. DTS/ERL with MLS-300 Siemens GJD Series (actuator auxiliary switches) Position Indicator Package

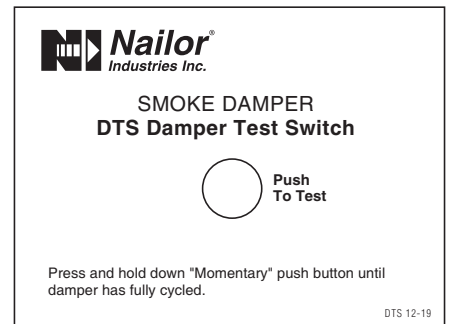
## DTS LABEL VARIATIONS:



ERL/DTS Combination Fire/Smoke Damper



DTO/DTS Combination Fire/Smoke Damper



DTS Smoke Damper

SCHEDULE TYPE

PROJECT

ENGINEER

CONTRACTOR

Page 2 of 2

DATE

B SERIES

SUPERSEDES

DRAWING NO.

9 - 3 - 20

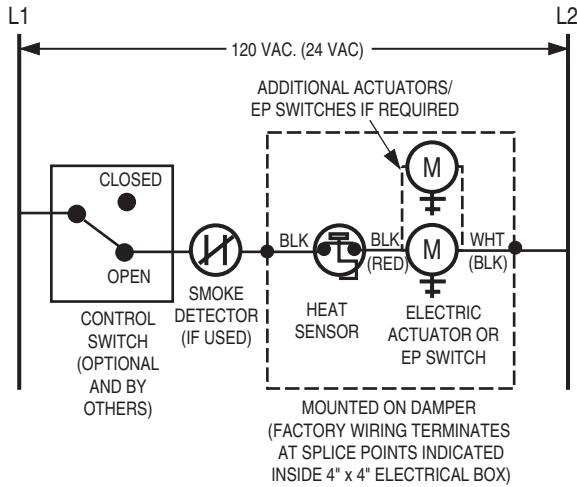
FD-ACC

3 - 29 - 18

DTS



# ELECTRIC RESETTABLE LINK FOR COMBINATION FIRE / SMOKE DAMPERS MODEL: ERL



## APPLICATION AND OPERATION:

The ERL Electric Resettable Link (heat sensor) is standard on all Nailor combination fire/smoke dampers with an electric actuator. The ERL is a thermally responsive bimetal disc/thermostat that opens and closes electrical contacts at a specific calibrated temperature. The ERL is a UL Classified Heat Responsive Device. The standard ERL has a fixed temperature setting of 250°F (121°C) which is the UL listed elevated/degradation temperature of the damper/actuator assembly. A 350°F (177°C) elevated temperature classification and ERL is available as an option.

[A 165°F and 212°F (74°C and 100°C) ERL are also available. Local codes have specified 165°F (74°C) widely in the past.]

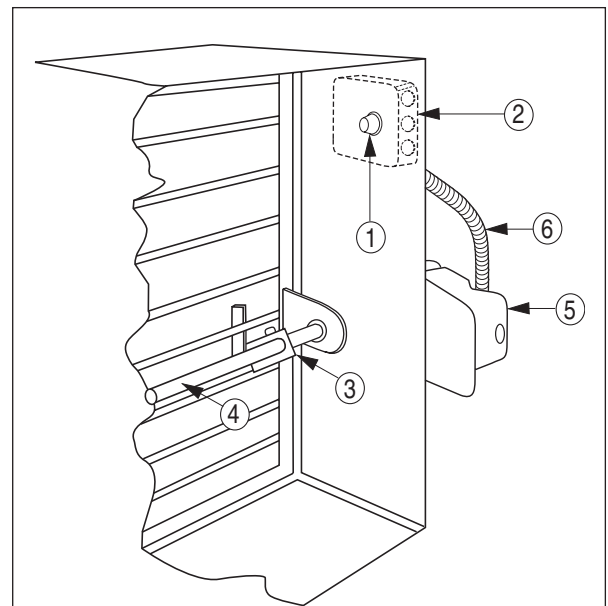
The ERL's function is to sense an abnormally high temperature, as caused by a fire and allow the damper to close in order to prevent the spread of fire and smoke. The sensor interrupts power to the actuator and the actuator's spring return mechanism causes the damper to close and lock.

In smoke control mode, when a signal is detected via a normally closed smoke detector connection, the damper will close and remain closed until the smoke signal ceases. The system will then reset when power is re-applied and the damper will open. The damper may be closed at anytime by placing a control switch (optional and by others) in the closed position.

The ERL in combination with all Nailor qualified electric or pneumatic actuators provides controlled closure and eliminates the instantaneous damper closure associated with traditional fusible links that can cause damage to the ductwork.

The ERL sensor is of the manual reset type and can be reset after the temperature has cooled down below the sensor set point. Exposure to actual fire conditions may render these devices unusable. In this case, it is recommended that a careful inspection of the damper, actuator and ERL be performed.

The ERL requires factory installation and wiring together with the associated actuator to meet UL requirements. If the damper is provided with a pneumatic actuator, an EP switch is required.



## DESCRIPTION:

1. ERL 165, 212, 250, 350 Electric Resettable Link (heat sensor)
2. Electrical Junction Box (and EP Switch with Pneumatic Actuator)
3. Over-Center Knee Lock
4. Jackshaft
5. Actuator
6. Flexible Conduit

**SCHEDULE TYPE**

**PROJECT**

**ENGINEER**

**CONTRACTOR**

Dimensions are in inches (mm).

**DATE**

**B SERIES**

**SUPERSEDES**

**DRAWING NO.**

9 - 9 - 20

FD-ACC

9 - 23 - 02

ERL

**"QUICK-SET" RETAINING ANGLES BOTH SIMPLIFY AND SPEED INSTALLATION,  
 SAVING BOTH TIME AND MONEY.**

**BENEFITS:**

- One piece angles are fastened together in the corners. Only two sets of angles to handle per damper (rather than four separate angles per side).
- Angles are shipped with damper - no sorting or matching.
- Provided with pre-drilled fastening holes on 2" (51) centers to ensure correct angle/sleeve attachment.
- Factory fabricated by Nailor to suit the individual fire damper.
- Reduced cost when compared to conventional retaining angles.
- Dampers can ship directly to the job site complete with all necessary installation sheet metal hardware (saves on double handling at contractor's shop).
- Help ensure a correct installation as per U.L. approved installation instructions.

The majority of installing contractors view fire damper installation as a costly time consuming and troublesome procedure. Eight conventional angles must be custom fabricated for each damper either in a sheet metal shop or at the job site and sized to suit each individual damper. Invariably, they are mislaid or lost and must be matched to each factory supplied damper.

The Nailor "Quick-Set" solution solves the majority of problems. They are pre-formed to fit and ship with the individual damper for ultimate convenience. "Quick-Set" angles are supplied with correctly spaced pre-drilled screw-holes to ensure a quick, easy and accurate installation for all integral sleeve Nailor fire and combination fire/smoke dampers - no measuring required.

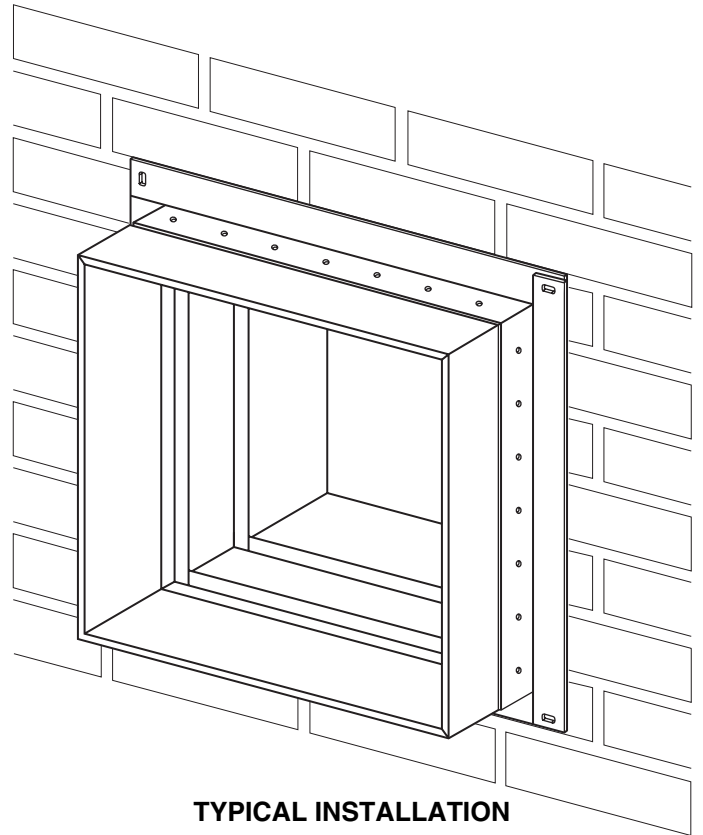
"Quick-Set" retaining angles provide the "complete" installation package. Simple, fast, convenient.

**MODELS:**

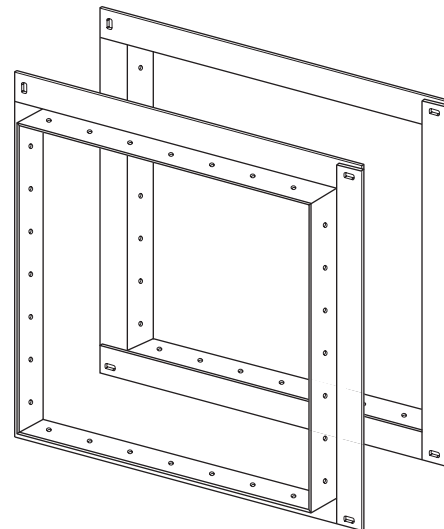
Nailor "Quick-Set" retaining angles are an accessory option for all dampers ordered with factory sleeves.

**QS2:** Two sides (pair). For standard installations where angles are installed on both sides of the fire partition.

**QS1:** One side (single set). For use in single side retaining angle installations and with grille mount and "out of wall" damper models.



**TYPICAL INSTALLATION**



**TYPICAL PAIR OF PRE-ASSEMBLED  
 QUICK-SET' RETAINING ANGLES**

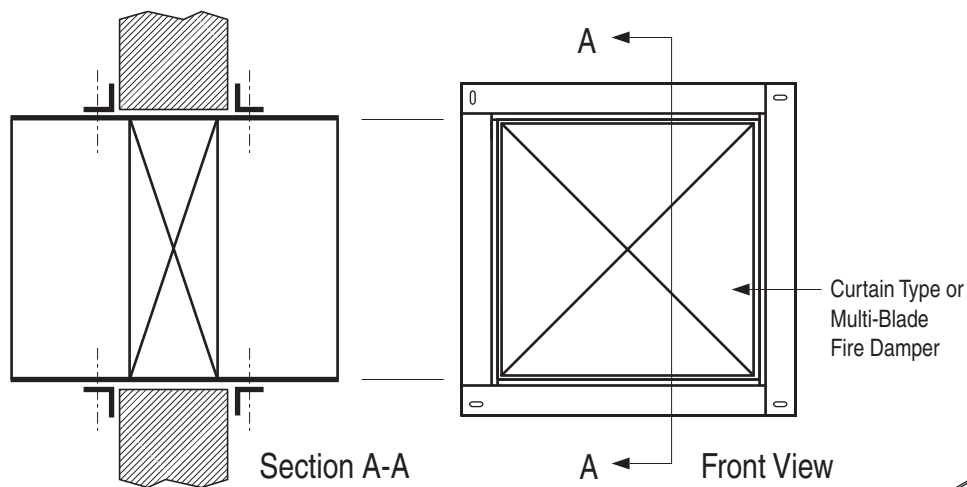


<b>SCHEDULE TYPE:</b>
<b>PROJECT:</b>
<b>ENGINEER:</b>
<b>CONTRACTOR:</b>

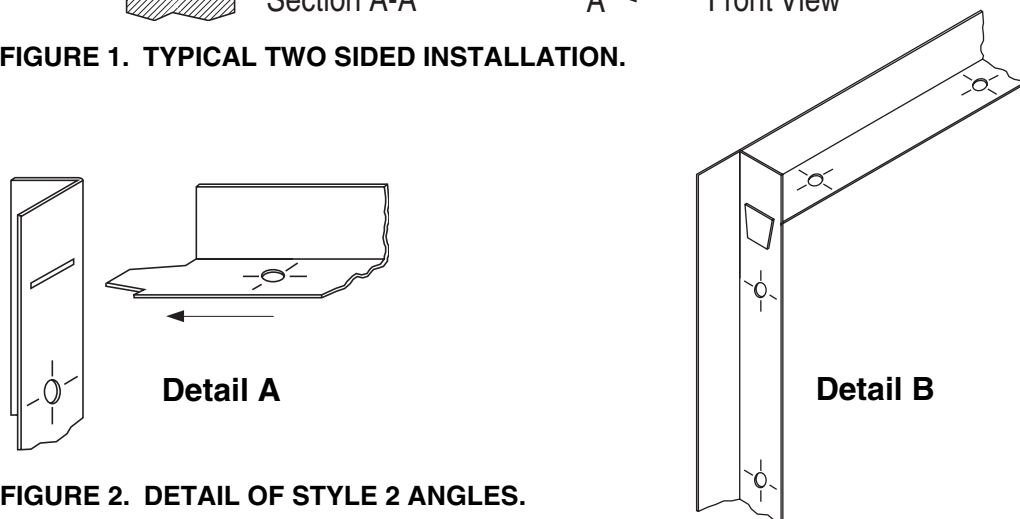
Page 1 of 2 Dimensions are in inches (mm).			
<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
2 - 26 - 09	FD-ACC	6 - 5 - 03	QSRA



**"QUICK-SET" RETAINING ANGLES**  
**FOR ALL SLEEVED FIRE AND**  
**COMBINATION FIRE/SMOKE DAMPERS**  
**MODELS: QS1 AND QS2**



**FIGURE 1. TYPICAL TWO SIDED INSTALLATION.**



**FIGURE 2. DETAIL OF STYLE 2 ANGLES.**

**APPLICATION:**

The Nailor Quick-Set Retaining Angle System may be used in lieu of conventional retaining angles on all Nailor Fire and Combination Fire/Smoke Dampers.

Quick-Set angles are supplied in one of two styles, dependent upon fire resistance label, damper size and installation method.

**Style 1:** 1 1/2" x 1 1/2" x 20 ga. (38 x 38 x 1.0) Four sides are connected together with rivets in three corners.

Standard for the majority of applications with the following limitations:

- 1 1/2 hour label fire dampers.
- Maximum Size: 36" x 36" (914 x 914)
- Two sided installation only

**Style 2:** 1 1/2" x 1 1/2" x 16 ga. (38 x 38 x 1.6) Slot and tab design. The retaining angle assembly for each side has four angles, each with a tab end and a slot end (Detail A).

The tabs are to be inserted into the slots and knocked down either before or after fastening to the sleeve (Detail B).

- 1 1/2 or 3 hour label fire dampers
- Maximum Size: 90" x 48" (2286 x 1219) or 48" x 90" (1219 x 2286)
- Single side (1 1/2 hour only. Refer to Single Side Retaining Angles Supplementary Installation Instructions for size limitations) or two sided installation

**Refer to the Following Installation Instructions:**

Quick-Set Retaining Angles	FDQSRA
Curtain Type Fire Dampers (D)0100 & (D)0500	FDINST
Curtain Type Fire Dampers 0200 & 0500 Thinline	FDTINST
Multi-Blade Fire Dampers 1200 & 1250	MBFDINST
Combination Fire/Smoke Dampers 1220	1220INST
Combination Fire/Smoke Dampers 1270	1270INST
Single Side Retaining Angles	FDSSRAINST

<b>SCHEDULE TYPE:</b>		Page 2 of 2			
<b>PROJECT:</b>		Dimensions are in inches (mm).			
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>	
<b>CONTRACTOR:</b>	2 - 26 - 09	FD-ACC	5 - 5 - 03	QSRA	