

INDUSTRIAL POSITIVE PRESSURE PIPING SYSTEMS

BOILER EXHAUST

TECHNICAL DATA AND PARTS SELECTION



**Model CBIL, CBILA, CBIL1, CBIL2,
CBIL1F, CBIL2F and CBIL4F**

Stainless Steel Double Wall Construction

CONTENTS

SECTION A

• LISTING AND APPLICATIONS 4

SECTION B

• FEATURES AND BENEFITS 5

SECTION C

• TECHNICAL DATA 7

SECTION D

• COMPONENTS

- Lengths..... 9
- Tees..... 11
- Elbows..... 14
- Fittings..... 19
- Adapters..... 21
- Support..... 21
- Guides 24
- Firestops..... 26
- Bands 29
- Collars 30
- Flashings 30
- Terminations..... 33
- Accessory..... 35

SECTION E

• SPECIAL PARTS 36

SECTION F

• INSTALLATION..... 37

LISTING AND APPLICATIONS

LISTINGS

Cleaver-Brooks venting systems models CBIL, CBILA, CBIL1, CBIL1F, CBIL2, CBIL2F and CBIL4F are listed by Underwriters Laboratories, inc. (UL) under file MH16456 and tested in accordance with UL 103 Standard for Factory-Built Chimneys for Residential Type and Building Heating Appliances and the Canadian Standard for 540°C (1000°F) and 760°C (1400°F) industrial Chimneys CAN/ULC-C959. These models are also suitable for use in positive pressure applications up to 60" water column. Listings include the following chimney product categories and diameters.



UL 103

| MODELS CBIL, CBIL2, CBIL2F AND CBIL4F | TEMPERATURE | SIZE |
|--|-------------------|----------------|
| Building Heating Appliance Type Chimney | 1000°F continuous | 6" to 48" I.D. |
| 1400°F Chimney (CBIL, CBIL2, CBIL2F et CBIL4F) | 1400°F continuous | 6" to 48" I.D. |

CAN/ULC C-959

| MODELS CBIL, CBIL2, CBIL2F AND CBIL4F | TEMPERATURE | SIZE |
|--|-------------------|----------------|
| Building Heating Appliance Type Chimney | 1000°F continuous | 6" to 48" I.D. |
| 1400°F Chimney (CBIL, CBIL2, CBIL2F et CBIL4F) | 1400°F continuous | 6" to 48" I.D. |

APPLICATIONS

1. Building Heating Appliance Chimney Listing (1000°F Chimney Listing) – under this category, models CBIL, CBILA, CBIL1, CBIL1F, CBIL2, CBIL2F and CBIL4F, have been determined suitable for venting flue gases at a temperature not exceeding 540°C (1000°F) under continuous operating conditions, from gas, liquid, oil or solid fuel fired appliances.
2. Building Heating Appliance Chimneys are suitable for use with Building Heating Appliances and Low Heat Appliances as described in the Chimney Selection Chart of National Fire Protection Association (NFPA) Standard No. 211.
3. 1400°F Chimney Listing – under this category, models CBIL, CBIL2F and CBIL4F, have been determined suitable for venting flue gases at a temperature not exceeding 760°C (1400°F) under continuous operating conditions. As such, they are suitable for use with ovens and furnaces as described in the Chimney Selection Chart of NFPA No. 211, in addition to other applications.

Other products and applications

| CRITERIA | GREASE DUCT | BHA CHIMNEY | 1400°F CHIMNEY |
|---|---|--|---|
| Application | Cooking appliances ventilation hoods restaurant grease ducts pizza oven exhausts. | <ul style="list-style-type: none"> • Low and high pressure steam boilers • Diesel and turbine exhausts • Building heating equipment | <ul style="list-style-type: none"> • Industrial furnaces • Processing equipment • Kilns and ovens • Diesel and turbine exhausts |
| Continuous operating temperature | 500°F | 1000°F | 1400°F |
| CBIL, CBGL, CBILA | Yes | Yes | Yes |
| CBIL2, CBIL1 | Yes | Yes | N/A |
| CBIL2F, CBGL2F, CBIL1F | N/A | Yes | Yes |
| CBIL4F, CBGL4F | Yes | Yes | N/A |

DESIGN AND SPECIFICATION

DESIGN

All our double wall chimney systems are part of a large family of CBI (Industrial Positive Pressure) products for industrial and commercial applications. The components of each model are made using the same continuous laser welding stainless steel inner wall. Since all components have the same small and large ends, the parts of all models fit into one another, thus eliminating the need for all kinds of adapters and providing an incomparable flexibility in selecting models of flues and chimneys.



CBILA, CBIL:
Double wall with 1" (CBILA) or 2" (CBIL) air space



CBIL1, CBIL2: Double wall with 1" (CBIL1) or 2" (CBIL2) mineral fiber insul.



CBIL1F, CBIL2F: Double wall with 1" (CBIL1F) or 2" (CBIL2F) ceramic fiber insul.



CBIL4F: Double wall with 4" ceramic fiber insul.

This unique method for joining components together is very efficient either in horizontal or in vertical installations. Our simple jointing concept along with the wide variety of components and accessories allows for a quick and simple installation, thus permitting you to save both time and money.

Cleaver-Brooks is proud of their industrial positive pressure piping systems. Recognized for being high quality products, they are also the easiest to install on the market!

These chimney systems are designed for exhaust of combustion gases, under positive, negative or neutral pressure, emanating from a variety of appliances including but not limited to:

- Diesel Engine and Gas Turbine Exhaust
- Restaurant Grease Duct
- Incinerator
- Coffee Roaster
- Air and Product containment
- Industrial Oven Exhaust
- Boiler Negative and Positive Pressure
- Unit Heater
- Heat Recovery

Models CBIL/A, CBIL1/2, CBIL1/2F and CBIL4F provide a wide variety of components and accessories, suitable for all kinds of site conditions, thus allowing for quick and simple installation. Each component is packed and shipped complete, with (1) one assembly band and (1) one finishing band for those having large ends. Sufficient tubes of appropriate sealant are also included in the shipment for completing the assembly.

SAMPLE SPECIFICATION (boiler Exhaust)

The chimney and flue must meet ULC (Underwriters Laboratories of Canada) and UL-103 (Underwriters Laboratories Inc.) section 22A for positive pressure exhaust system up to 60" water column and carry the appropriate approval labels. The chimney shall be listed by UL as a "B.H.A." (Building heating appliance) chimney for continuous operation up to 1000°F (540°C) maximum. For applications above 1000°F (540°C), the chimney shall be listed by UL as a "1400°F chimney" for continuous operation up to 1400°F (760°C) maximum.

The chimney and flue components must be of double wall construction and properly designed for positive pressure exhaust. The inner wall must be of 20 gauge (18 gauge – 42" to 48" diameter) 304 stainless steel, with continuous laser welding. The outer wall must be of 24 gauge (20 gauge – 42" to 48" diameter) 304 stainless steel. A high temperature insulation must be installed between walls. The jointing must be made using an assembly band, a finishing band and an appropriate sealing material, as supplied by the manufacturer. Quality required : Model CBIL2.

All components must be installed according to the manufacturer recommendations and must meet the NFPA and local safety code requirements.

MATERIALS

MODEL CBIL, CBILA

| | |
|-------------|---|
| Inner wall: | 316L or 304 2B stainless steel (20 ga - 6" (152mm) to 40" (1016mm) diameter; 18 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Outer wall: | 301,316L, 304 2B stainless steel, 430 or galvalume (24 ga - 6" (152mm) to 40" (1016mm) diameter; 20 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Insulation: | CBILA : 1" (25mm) air space CBIL : 2" (51mm) air space |

MODEL CBIL1, CBIL2

| | |
|-------------|---|
| Inner wall: | 316L or 304 2B stainless steel (20 ga - 6" (152mm) to 40" (1016mm) diameter; 18 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Outer wall: | 301,316L, 304 2B stainless steel, 430 or galvalume (24 ga - 6" (152mm) to 40" (1016mm) diameter; 20 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Insulation: | CBIL1 : 1" (25mm) high temperature mineral fiber CBIL2 : 2" (51mm) high temperature mineral fiber |

MODEL CBIL1F, CBIL2F

| | |
|-------------|---|
| Inner wall: | 316L or 304 2B stainless steel (20 ga - 6" (152mm) to 40" (1016mm) diameter; 18 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Outer wall: | 301,316L, 304 2B stainless steel, 430 or galvalume (24 ga - 6" (152mm) to 40" (1016mm) diameter; 20 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Insulation: | CBIL1F : 1" (25mm) high temperature ceramic fiber CBIL2F : 2" (51mm) high temperature ceramic fiber |

MODEL CBIL4F

| | |
|-------------|---|
| Inner wall: | 316L or 304 2B stainless steel (20 ga - 6" (152mm) to 40" (1016mm) diameter; 18 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Outer wall: | 301,316L, 304 2B stainless steel, 430 or galvalume (24 ga - 6" (152mm) to 40" (1016mm) diameter; 20 ga - 42" (1067mm) to 48" (1219mm) diameter) |
| Insulation: | 4" (102mm) high temperature ceramic fiber |

SUPPORTS & ACCESSORIES

Galvanized steel, hot-galvanized steel, 316 L or 304 2B stainless steel

| COMPONENTS | Internal walls | | external walls | | materials | |
|--|----------------|-----------|----------------|-----------|-----------|------------|
| | STANDARD | AVAILABLE | STANDARD | AVAILABLE | STANDARD | AVAILABLE |
| ANCHOR PLATE | 2 | 1 | 2 | 1 | 3 | 1, 2 and 4 |
| ASSEMBLY BAND | 2 | 1 | --- | --- | -- | --- |
| COLLARS, FLASHING | --- | --- | --- | --- | -- | 1 and 2 |
| DRAIN SECTION | 2 | 1 | 2 | 1 | -- | --- |
| ELBOWS | 2 | 1 | 2 | 1 | -- | --- |
| EXHAUST CONE, MITER SECTION | 2 | 1 | 2 | 1 | -- | --- |
| EXPANSION JOINT | 2 | 1 | 2 | 1 | -- | --- |
| FAN ADAPTER | 2 | 1 | 2 | 1 | --- | --- |
| FINISHING BAND | --- | --- | 2 | 1 | -- | --- |
| FIRESTOP, WALL FIRESTOP | --- | --- | --- | --- | 3 | 1 and 2 |
| HANGER BRACKET | --- | --- | --- | --- | 3 | 1, 2 and 4 |
| INCREASER / REDUCER | 2 | 1 | 2 | 1 | --- | --- |
| INSULATED SLEEVE, INSULATED WALL FIRESTOP | --- | --- | --- | --- | 3 | 1 and 2 |
| LENGTH, ADJUSTABLE LENGTH, VARIABLE LENGTH | 2 | 1 | 2 | 1 | --- | --- |
| RADIANT FIRESTOP | --- | --- | --- | --- | 3 | 1 and 2 |
| RAIN CAP, RAINSHIELD, CLOSURE SECTION | 2 | 1 | 2 | 1 | --- | --- |
| ROOF BAND, GUYWIRE BAND | --- | -- | --- | -- | 2 | 1, 3 and 4 |
| ROOF SUPPORT, GUIDING SPACER | --- | -- | --- | -- | 3 | 1, 2 and 4 |
| STARTING ADAPTER, DRAIN ADAPTER | 2 | 1 | --- | -- | 3 | 1, 2 and 4 |
| STARTING SLEEVE | 2 | 1 | --- | -- | 3 | 1, 2 and 4 |
| TEES | 2 | 1 | 2 | 1 | -- | --- |
| TEE CAPS | 2 | 1 | 2 | 1 | -- | --- |
| WALLS BAND, SUSPENSION BAND | --- | --- | --- | --- | 3 | 1, 2 and 4 |
| WALL / FLOOR GUIDES | -- | --- | --- | --- | 3 | -- |
| WALL / HORIZONTAL SUPPORTS | 2 | 1 | 2 | 1 | 3 | 1, 2 and 4 |

1: 316 L stainless steel 2: 304 2B stainless steel 3: Galvanized steel 4: Hot-galvanized steel

WEIGHTS AND CLEARANCES

| CBIL • CBILA • CBIL1 • CBIL1F • CBIL2 • CBIL2F • CBIL4F | | | | LINEAR WEIGHT | | | | | | | | | |
|--|------|-----------------|---------------------|---------------|------|-------|------|----------------|------|----------------|-------|--------|-------|
| I.D. | | AREA | | CBIL | | CBILA | | CBIL1 • CBIL1F | | CBIL2 • CBIL2F | | CBIL4F | |
| in | mm | in ² | 1000mm ² | lb/ft | kg/m | lb/ft | kg/m | lb/ft | kg/m | lb/ft | kg/m | lb/ft | kg/m |
| 6 | 152 | 28 | 18.2 | 5.7 | 8.5 | 5.3 | 7.8 | 6.5 | 9.6 | 8.8 | 13.1 | 14.6 | 21.8 |
| 8 | 203 | 50 | 32.4 | 7.2 | 10.8 | 6.8 | 10.2 | 8.4 | 12.5 | 11.1 | 16.5 | 17.7 | 26.3 |
| 10 | 254 | 79 | 50.7 | 8.8 | 13.0 | 8.4 | 12.5 | 10.3 | 15.3 | 13.4 | 19.9 | 20.7 | 30.8 |
| 12 | 302 | 113 | 73.0 | 10.3 | 15.3 | 9.9 | 14.8 | 12.2 | 18.1 | 15.6 | 23.3 | 23.8 | 35.4 |
| 14 | 356 | 154 | 99.3 | 11.8 | 17.5 | 11.5 | 17.1 | 14.0 | 20.9 | 17.9 | 26.7 | 26.8 | 39.9 |
| 16 | 406 | 201 | 129.7 | 13.3 | 19.8 | 13.0 | 19.4 | 15.9 | 23.7 | 20.2 | 30.1 | 29.9 | 44.4 |
| 18 | 457 | 254 | 164.2 | 14.8 | 22.0 | 14.6 | 21.7 | 17.8 | 26.5 | 22.5 | 33.4 | 32.9 | 49.0 |
| 20 | 508 | 314 | 202.7 | 16.3 | 24.3 | 16.1 | 24.0 | 19.7 | 29.4 | 24.7 | 36.8 | 35.9 | 53.5 |
| 22 | 559 | 380 | 245.2 | 17.8 | 26.5 | 17.7 | 26.3 | 21.6 | 32.2 | 27.0 | 40.2 | 39.0 | 58.0 |
| 24 | 610 | 452 | 291.9 | 19.3 | 28.7 | 19.2 | 28.6 | 23.5 | 35.0 | 29.3 | 43.6 | 42.0 | 62.5 |
| 26 | 660 | 531 | 342.5 | 20.8 | 31.0 | 20.8 | 30.9 | 25.4 | 37.8 | 31.6 | 47.0 | 45.1 | 67.1 |
| 28 | 711 | 616 | 397.3 | 22.3 | 33.2 | 22.3 | 33.2 | 27.3 | 40.6 | 33.9 | 50.4 | 48.1 | 71.6 |
| 30 | 762 | 707 | 456.0 | 23.8 | 35.5 | 23.9 | 35.5 | 29.2 | 43.4 | 36.1 | 53.8 | 51.6 | 76.1 |
| 32 | 813 | 804 | 518.9 | 25.4 | 37.7 | 25.4 | 37.8 | 31.1 | 46.3 | 38.4 | 57.2 | 54.2 | 80.7 |
| 34 | 864 | 908 | 585.8 | 26.9 | 40.0 | 27.0 | 40.1 | 33.0 | 49.1 | 40.7 | 60.5 | 57.3 | 85.2 |
| 36 | 914 | 1018 | 656.7 | 28.4 | 42.2 | 28.5 | 42.4 | 34.9 | 51.9 | 43.0 | 64.9 | 60.3 | 89.7 |
| 38 | 965 | 1134 | 731.7 | 29.9 | 44.5 | 30.1 | 44.8 | 36.8 | 54.7 | 45.2 | 67.3 | 63.3 | 94.3 |
| 40 | 1016 | 1257 | 810.7 | 31.4 | 46.7 | 31.6 | 47.1 | 38.7 | 57.5 | 47.5 | 70.7 | 66.3 | 98.8 |
| 42 | 1067 | 1385 | 893.8 | 46.2 | 68.7 | 46.5 | 69.2 | 53.5 | 79.7 | 63.1 | 93.9 | 83.3 | 124.0 |
| 44 | 1118 | 1521 | 981.0 | 48.3 | 71.9 | 48.7 | 72.5 | 56.0 | 83.4 | 66.0 | 98.2 | 87.0 | 129.4 |
| 46 | 1067 | 1662 | 1072.2 | 50.4 | 75.0 | 50.9 | 75.7 | 58.5 | 87.1 | 68.9 | 102.5 | 90.6 | 134.9 |
| 48 | 1219 | 1810 | 1167.5 | 52.5 | 78.2 | 53.0 | 78.9 | 61.0 | 90.8 | 71.7 | 106.8 | 94.3 | 140.3 |

| Minimum clearance air space to combustible construction | | | | | | | | | | | | | |
|---|--------|------------------|--|-----------|--------|--------|--------|--------|------------------|--|-----------------|--|-----------|
| Inside Diameter | | | | | | | | | | | | | |
| CBILA | | CBIL | | Clearance | CBIL1 | | CBIL2 | | CBIL1F | | CBIL2F & CBIL4F | | Clearance |
| 1000°F | 1400°F | 1000°F to 1400°F | | | 1000°F | 1000°F | 1000°F | 1400°F | 1000°F to 1400°F | | | | |
| 6" | 6" | 6-12" | | 4" | 6" | 6-12" | 6" | 6" | 6-12" | | 1" | | |
| 8-10" | 8-10" | 14" | | 5" | 8-10" | 14" | 8-10" | - | 14" | | 1.5" | | |
| 12-16" | - | 16-18" | | 6" | - | 16-18" | - | - | 16-18" | | 2" | | |
| 18-20" | - | 20-24" | | 7" | 12-16" | - | 12-16" | - | - | | 2.5" | | |
| 22-24" | - | 26-28" | | 8" | 18" | 20-22" | 18" | 8-10" | 20-22" | | 3" | | |
| 26-30" | - | 30-34" | | 9" | 20-26" | 24-26" | 20-26" | - | 24-26" | | 4" | | |
| 32-34" | - | 36-38" | | 10" | 28-32" | 28-32" | 28-32" | - | 28-32" | | 5" | | |
| 36-40" | - | 40-48" | | 11" | 34-38" | 34-36" | 34-38" | - | 34-36" | | 6" | | |
| 42-46" | - | - | | 12" | 40-44" | 38-40" | 40-44" | - | 38-40" | | 7" | | |
| 48" | - | - | | 13" | 46-48" | 42-48" | 46-48" | - | 42-48" | | 8" | | |

Minimum opening when installing a chimney through a floor or wall made of combustible construction.

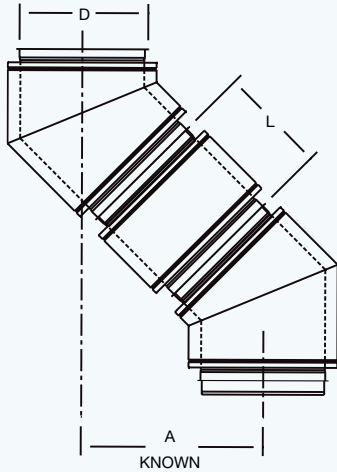
O.D. + 2 X (min. clearance air space) Ex. : CBIL2, B.H.A., I.D. = 8" ⇒ 12" + (2 X 1") = 14"

Minimum opening when installing a chimney through a floor or wall made of non combustible construction.

O.D. + 1" Ex. : CBIL2, B.H.A., O.D. = 12" ⇒ 12" + 1" = 13"

OFFSETS

OFFSET CALCULATIONS



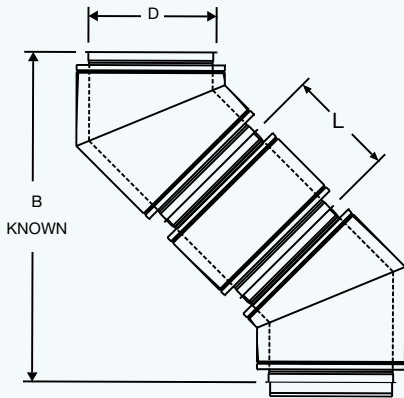
EFFECTIVE LENGTH CALCULATIONS

- OFFSET dimension is known
- Effective length is to be determined using equation 1, 2 or 3 depending on elbows used

| | | |
|----|-----------------------------------|------------|
| 1. | $L(A) = 3.864(A) - 0.132D - 13''$ | 15° elbows |
| 2. | $L(A) = 2(A) - 0.268D - 13''$ | 30° elbows |
| 3. | $L(A) = 1.414(A) - 0.414D - 13''$ | 45° elbows |

EXAMPLE: An 8" ID CBIL2 chimney with a known offset width of 44.75"(A) using 2-45° elbows.

- $L(A) = 1.414(A) - 0.414D - 13''$
 $L(A) = 1.414(44.75'') - 0.414(8'') - 13''$
 $L(A) = 47''$ in effective length choose a 48" length (48L)



EFFECTIVE LENGTH CALCULATIONS

- HEIGHT dimension is known
- Effective length is to be determined using equation 4, 5 or 6 depending on elbows used

| | | |
|----|---------------------------------------|------------|
| 4. | $L(B) = 1.035(B) - 0.268D - 26.459''$ | 15° elbows |
| 5. | $L(B) = 1.155(B) - 0.577D - 28.011''$ | 30° elbows |
| 6. | $L(B) = 1.414(B) - D - 31.385''$ | 45° elbows |

EXAMPLE: A 10" ID chimney with a known offset height of 55"(B) using 2- 45° elbows

- $L(B) = 1.414(B) - D - 31.385''$
 $L(B) = 1.414(55'') - 10'' - 31.385''$
 $L(B) = 36.385''$ in effective length choose a 24" length (24L) + adjustable length (AL)

Refer to the elbows specific table for minimum offsets and heights of two matched elbows. For special conditions, we can manufacture one piece offset.

LENGTHS

STRAIGHT LENGTHS • 48L • 36L • 24L • 12L

Available in 22 diameters from 6 to 48" (152 to 1219mm).
 Standard lengths: 48" (1219mm), 36" (914mm), 24" (610mm) and 12" (305mm).

Includes:

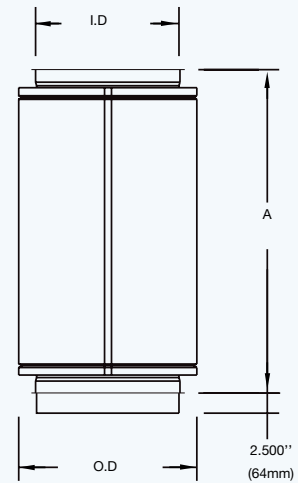
- 1 Assembly band (AB)
- 1 Finishing band (FB)

$K = 0.30 L/D$

Where L = Pipe length in feet
 D = Pipe diameter in inches



| CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|---------------------|------|------|------|--------|------|------|------|----------------------|------|------|------|
| I.D. | | O.D. | | I.D. | | O.D. | | I.D. | | O.D. | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 10 | 254 | 6 | 152 | 14 | 356 | 6 | 152 | 8 | 203 |
| 7 | 178 | 11 | 279 | 7 | 178 | 15 | 381 | 7 | 178 | 9 | 229 |
| 8 | 203 | 12 | 305 | 8 | 203 | 16 | 406 | 8 | 203 | 10 | 254 |
| 9 | 229 | 13 | 330 | 9 | 229 | 17 | 432 | 9 | 229 | 11 | 279 |
| 10 | 254 | 14 | 356 | 10 | 254 | 18 | 457 | 10 | 254 | 12 | 305 |
| 12 | 305 | 16 | 406 | 12 | 305 | 20 | 508 | 12 | 305 | 14 | 356 |
| 14 | 356 | 18 | 457 | 14 | 356 | 22 | 559 | 14 | 356 | 16 | 406 |
| 16 | 406 | 20 | 508 | 16 | 406 | 24 | 610 | 16 | 406 | 18 | 457 |
| 18 | 457 | 22 | 559 | 18 | 457 | 26 | 660 | 18 | 457 | 20 | 508 |
| 20 | 508 | 24 | 610 | 20 | 508 | 28 | 711 | 20 | 508 | 22 | 559 |
| 22 | 559 | 26 | 660 | 22 | 559 | 30 | 762 | 22 | 559 | 24 | 610 |
| 24 | 610 | 28 | 711 | 24 | 610 | 32 | 813 | 24 | 610 | 26 | 660 |
| 26 | 660 | 30 | 762 | 26 | 660 | 34 | 864 | 26 | 660 | 28 | 711 |
| 28 | 711 | 32 | 813 | 28 | 711 | 36 | 914 | 28 | 711 | 30 | 762 |
| 30 | 762 | 34 | 864 | 30 | 762 | 38 | 965 | 30 | 762 | 32 | 813 |
| 32 | 813 | 36 | 914 | 32 | 813 | 40 | 1016 | 32 | 813 | 34 | 864 |
| 34 | 864 | 38 | 965 | 34 | 864 | 42 | 1067 | 34 | 864 | 36 | 914 |
| 36 | 914 | 40 | 1016 | 36 | 914 | 44 | 1118 | 36 | 914 | 38 | 965 |
| 38 | 965 | 42 | 1067 | 38 | 965 | 46 | 1168 | 38 | 965 | 40 | 1016 |
| 40 | 1016 | 44 | 1118 | 40 | 1016 | 48 | 1219 | 40 | 1016 | 42 | 1067 |
| 42 | 1067 | 46 | 1168 | 42 | 1067 | 50 | 1270 | 42 | 1067 | 44 | 1118 |
| 44 | 1118 | 48 | 1219 | 44 | 1118 | 52 | 1321 | 44 | 1118 | 46 | 1168 |
| 46 | 1168 | 50 | 1270 | 46 | 1168 | 54 | 1372 | 46 | 1168 | 48 | 1219 |
| 48 | 1219 | 52 | 1321 | 48 | 1219 | 56 | 1422 | 48 | 1219 | 50 | 1270 |



| LENGTHS | EFFECTIVE LENGTHS 'A' | |
|---------------|-----------------------|------|
| | in | mm |
| 12" (305 mm) | 11.000 | 279 |
| 24" (610 mm) | 23.000 | 584 |
| 36" (914 mm) | 35.000 | 889 |
| 48" (1219 mm) | 47.000 | 1194 |

LENGTHS

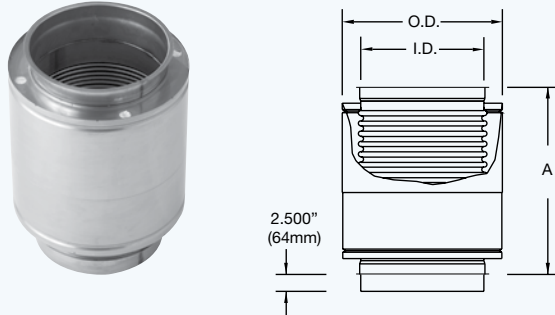
EXPANSION JOINT • EJ

Used to compensate for linear expansion between two fixed points on engine exhaust or other high pressure applications

Includes:

- 1 Assembly Band (AB)
- 1 Finishing Band (FB)

K = same as pipe length



| I.D. | | A | |
|------------------|-------------|--------|-----|
| in | mm | in | mm |
| 6.000 to 16.000 | 152 to 406 | 19.000 | 483 |
| 18.000 to 26.000 | 457 to 660 | 25.000 | 635 |
| 28.000 to 36.000 | 711 to 914 | 26.000 | 660 |
| 38.000 to 48.000 | 965 to 1219 | 30.000 | 762 |

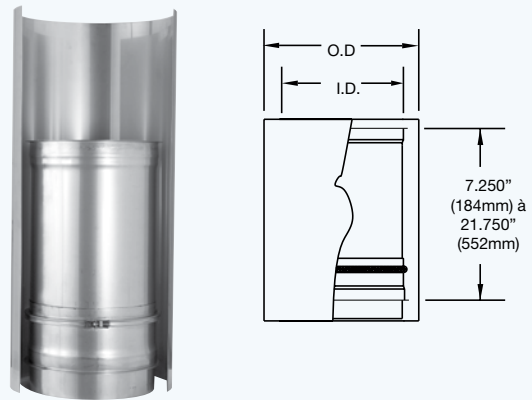
VARIABLE LENGTH • VL

Used to absorb linear expansion between two fixed points on low pressure applications.

Includes:

- 1 Assembly band (AB)
- 1 Outer wall 36" (914mm) long
- 1 Strip of insulation for CBGL2F systems

K = Same as pipe length



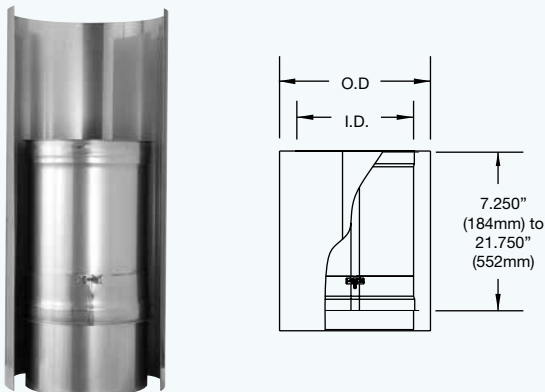
ADJUSTABLE LENGTH • AL

Used to complete on site installation precisely. It is not designed to compensate for linear expansion nor to support the vertical load of the chimney.

Includes:

- 1 Assembly band (AB)
- 1 Outer wall 36" (914mm) long
- 1 Strip of insulation for CBGL2F systems

K = Same as pipe length



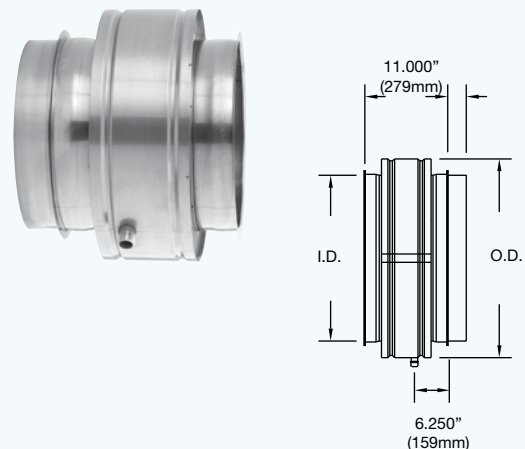
DRAIN SECTION • DS

Used to collect rainwater or condensation water from inside vertical or horizontal flue. To be connected to a drain of 3/4"ø (19mm) - NPT.

Includes:

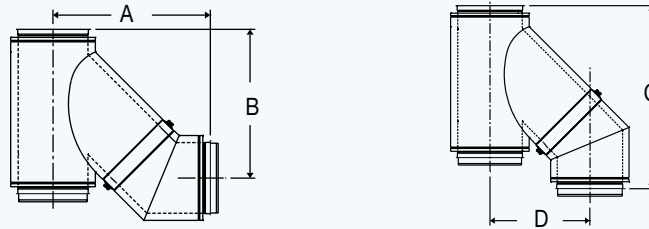
- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = Same as pipe length



TEES

45° TEE and 45° ELBOW ASSEMBLY



| I.D. | CBIL, CBIL2, CBIL2F | | | | | CBIL4F | | | | | CBILA, CBIL1, CBIL1F | | | | |
|------|---------------------|--------|--------|--------|--------|--------|--------|--------|---------|--------|----------------------|--------|--------|--------|--------|
| | O.D. | A | B | C | D | O.D. | A | B | C | D | O.D. | A | B | C | D |
| 6 | 10 | 26.471 | 27.471 | 35.213 | 18.728 | 14 | 31.006 | 32.006 | 40.749 | 22.263 | 8 | 22.496 | 23.996 | 30.238 | 16.253 |
| 8 | 12 | 28.885 | 29.885 | 38.042 | 20.728 | 16 | 33.42 | 34.42 | 43.577 | 24.263 | 10 | 24.91 | 26.41 | 33.067 | 18.253 |
| 10 | 14 | 31.299 | 32.299 | 40.87 | 22.728 | 18 | 35.835 | 36.835 | 46.406 | 26.263 | 12 | 27.324 | 28.824 | 35.895 | 20.253 |
| 12 | 16 | 33.713 | 34.713 | 43.698 | 24.728 | 20 | 38.249 | 39.249 | 49.234 | 28.263 | 14 | 29.738 | 31.238 | 38.724 | 22.253 |
| 14 | 18 | 36.127 | 37.127 | 46.527 | 26.728 | 22 | 40.663 | 41.663 | 52.062 | 30.263 | 16 | 32.153 | 33.653 | 41.552 | 24.253 |
| 16 | 20 | 38.542 | 39.542 | 49.355 | 28.728 | 24 | 43.077 | 44.077 | 54.891 | 32.263 | 18 | 34.567 | 36.067 | 44.38 | 26.253 |
| 18 | 22 | 40.956 | 41.956 | 52.184 | 30.728 | 26 | 45.491 | 46.491 | 57.719 | 34.263 | 20 | 36.981 | 38.481 | 47.209 | 28.253 |
| 20 | 24 | 43.37 | 44.37 | 55.012 | 32.728 | 28 | 47.906 | 48.906 | 60.548 | 36.263 | 22 | 39.395 | 40.895 | 50.037 | 30.253 |
| 22 | 26 | 45.784 | 46.784 | 57.841 | 34.728 | 30 | 50.32 | 51.32 | 63.376 | 38.263 | 24 | 41.809 | 43.309 | 52.866 | 32.253 |
| 24 | 28 | 48.198 | 49.198 | 60.669 | 36.728 | 32 | 52.734 | 53.734 | 66.205 | 40.263 | 26 | 44.224 | 45.724 | 55.694 | 34.253 |
| 26 | 30 | 50.613 | 51.613 | 63.497 | 38.728 | 34 | 55.148 | 56.148 | 69.033 | 42.263 | 28 | 46.638 | 48.138 | 58.523 | 36.253 |
| 28 | 32 | 53.027 | 54.027 | 66.326 | 40.728 | 36 | 57.562 | 58.562 | 71.861 | 44.263 | 30 | 49.052 | 50.552 | 61.351 | 38.253 |
| 30 | 34 | 55.441 | 56.441 | 69.154 | 42.728 | 38 | 59.977 | 60.977 | 74.69 | 46.263 | 32 | 51.466 | 52.966 | 64.179 | 40.253 |
| 32 | 36 | 57.855 | 58.855 | 71.983 | 44.728 | 40 | 62.391 | 63.391 | 77.518 | 48.263 | 34 | 53.88 | 55.38 | 67.008 | 42.253 |
| 34 | 38 | 60.27 | 61.27 | 74.811 | 46.728 | 42 | 64.805 | 65.805 | 80.347 | 50.263 | 36 | 56.295 | 57.795 | 69.836 | 44.253 |
| 36 | 40 | 62.684 | 63.684 | 77.64 | 48.728 | 44 | 67.219 | 68.219 | 83.175 | 52.263 | 38 | 58.709 | 60.209 | 72.665 | 46.253 |
| 38 | 42 | 65.098 | 66.098 | 80.468 | 50.728 | 46 | 69.634 | 70.634 | 86.004 | 54.263 | 40 | 61.123 | 62.623 | 75.493 | 48.253 |
| 40 | 44 | 67.512 | 68.512 | 83.296 | 52.728 | 48 | 72.048 | 73.048 | 88.832 | 56.263 | 42 | 63.537 | 65.037 | 78.322 | 50.253 |
| 42 | 46 | 69.926 | 70.926 | 86.125 | 54.728 | 50 | 74.462 | 75.462 | 91.66 | 58.263 | 44 | 65.952 | 67.452 | 81.15 | 52.253 |
| 44 | 48 | 72.341 | 73.341 | 88.953 | 56.728 | 52 | 76.876 | 77.876 | 94.489 | 60.263 | 46 | 68.366 | 69.866 | 83.978 | 54.253 |
| 46 | 50 | 74.755 | 75.755 | 91.782 | 58.728 | 54 | 79.29 | 80.29 | 97.317 | 62.263 | 48 | 70.78 | 72.28 | 86.807 | 56.253 |
| 48 | 52 | 77.169 | 78.169 | 94.61 | 60.728 | 56 | 81.705 | 82.705 | 100.146 | 64.263 | 50 | 73.194 | 74.694 | 89.635 | 58.253 |

TEES

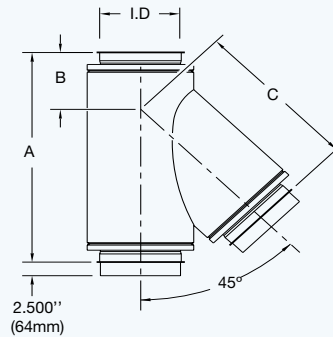
45° TEE • T45

For connection of vertical and horizontal lengths at a 45° angle. It provides low resistance to facilitate gas discharge. A tee cap (TC) or drain-tee cap (DC) may be used to block one of the cleaning or drainage openings.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.4



| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|------|--------|-----|--------|------|--------|------|--------|-----|--------|------|----------------------|------|--------|-----|--------|------|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 27.485 | 698 | 8.743 | 222 | 19.243 | 489 | 32.485 | 825 | 9.743 | 247 | 22.743 | 578 | 24.485 | 622 | 7.743 | 197 | 16.743 | 425 |
| 8 | 203 | 30.314 | 770 | 9.157 | 233 | 21.657 | 550 | 35.314 | 897 | 10.157 | 258 | 25.157 | 639 | 27.314 | 694 | 8.157 | 207 | 19.157 | 487 |
| 10 | 254 | 33.142 | 842 | 9.571 | 243 | 24.071 | 611 | 38.142 | 969 | 10.571 | 269 | 27.571 | 700 | 30.142 | 766 | 8.571 | 218 | 21.571 | 548 |
| 12 | 305 | 35.971 | 914 | 9.985 | 254 | 26.485 | 673 | 40.971 | 1041 | 10.985 | 279 | 30.485 | 774 | 32.971 | 837 | 8.985 | 228 | 23.985 | 609 |
| 14 | 356 | 38.799 | 985 | 10.399 | 264 | 28.899 | 734 | 43.799 | 1112 | 11.399 | 290 | 32.899 | 836 | 35.799 | 909 | 9.399 | 239 | 26.399 | 671 |
| 16 | 406 | 41.627 | 1057 | 10.814 | 275 | 31.314 | 795 | 46.627 | 1184 | 11.814 | 300 | 35.314 | 897 | 38.627 | 981 | 9.814 | 249 | 28.814 | 732 |
| 18 | 457 | 44.456 | 1129 | 11.228 | 285 | 33.728 | 857 | 49.456 | 1256 | 12.228 | 311 | 37.728 | 958 | 41.456 | 1053 | 10.228 | 260 | 31.228 | 793 |
| 20 | 508 | 47.284 | 1201 | 11.642 | 296 | 36.142 | 918 | 52.284 | 1328 | 12.642 | 321 | 40.142 | 1020 | 44.284 | 1125 | 10.642 | 270 | 33.642 | 855 |
| 22 | 559 | 50.113 | 1273 | 12.056 | 306 | 38.556 | 979 | 55.113 | 1400 | 13.056 | 332 | 42.556 | 1081 | 47.113 | 1197 | 11.056 | 281 | 36.056 | 916 |
| 24 | 610 | 52.941 | 1345 | 12.471 | 317 | 40.971 | 1041 | 57.941 | 1472 | 13.471 | 342 | 44.971 | 1142 | 49.941 | 1269 | 11.471 | 291 | 38.471 | 977 |
| 26 | 660 | 55.77 | 1417 | 12.885 | 327 | 43.385 | 1102 | 60.77 | 1544 | 13.885 | 353 | 47.385 | 1204 | 52.77 | 1340 | 11.885 | 302 | 40.885 | 1038 |
| 28 | 711 | 58.598 | 1488 | 13.299 | 338 | 45.799 | 1163 | 63.598 | 1615 | 14.299 | 363 | 49.799 | 1265 | 55.598 | 1412 | 12.299 | 312 | 43.299 | 1100 |
| 30 | 762 | 61.426 | 1560 | 13.713 | 348 | 48.213 | 1225 | 66.426 | 1687 | 14.713 | 374 | 52.213 | 1326 | 58.426 | 1484 | 12.713 | 323 | 45.713 | 1161 |
| 32 | 813 | 64.255 | 1632 | 14.127 | 359 | 50.627 | 1286 | 69.255 | 1759 | 15.127 | 384 | 54.627 | 1388 | 61.255 | 1556 | 13.127 | 333 | 48.127 | 1222 |
| 34 | 864 | 67.083 | 1704 | 14.542 | 369 | 53.042 | 1347 | 72.083 | 1831 | 15.542 | 395 | 57.042 | 1449 | 64.083 | 1628 | 13.542 | 344 | 50.542 | 1284 |
| 36 | 914 | 69.912 | 1776 | 14.956 | 380 | 55.456 | 1409 | 74.912 | 1903 | 15.956 | 405 | 59.456 | 1510 | 66.912 | 1700 | 13.956 | 354 | 52.956 | 1345 |
| 38 | 965 | 72.74 | 1848 | 15.37 | 390 | 57.87 | 1470 | 77.74 | 1975 | 16.37 | 416 | 61.87 | 1571 | 69.74 | 1771 | 14.37 | 365 | 55.37 | 1406 |
| 40 | 1016 | 75.569 | 1919 | 15.784 | 401 | 60.284 | 1531 | 80.569 | 2046 | 16.784 | 426 | 64.284 | 1633 | 72.569 | 1843 | 14.784 | 376 | 57.784 | 1468 |
| 42 | 1067 | 78.397 | 1991 | 16.198 | 411 | 62.698 | 1593 | 83.397 | 2118 | 17.198 | 437 | 66.698 | 1694 | 75.397 | 1915 | 15.198 | 386 | 60.198 | 1529 |
| 44 | 1118 | 81.225 | 2063 | 16.613 | 422 | 65.113 | 1654 | 86.225 | 2190 | 17.613 | 447 | 69.113 | 1755 | 78.225 | 1987 | 15.613 | 397 | 62.613 | 1590 |
| 46 | 1168 | 84.054 | 2135 | 17.027 | 432 | 67.527 | 1715 | 89.054 | 2262 | 18.027 | 458 | 71.527 | 1817 | 81.054 | 2059 | 16.027 | 407 | 65.027 | 1652 |
| 48 | 1219 | 86.882 | 2207 | 17.441 | 443 | 69.941 | 1777 | 91.882 | 2334 | 18.441 | 468 | 73.941 | 1878 | 83.882 | 2131 | 16.441 | 418 | 67.441 | 1713 |

TEES

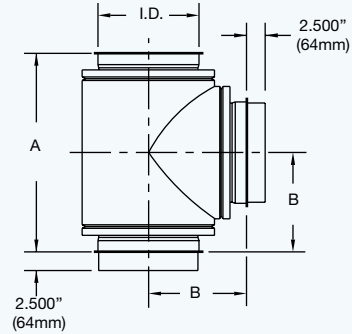
90° TEE • T90

For connection of vertical and horizontal lengths. May be used for the installation of a draft regulator at the point of connection between the flue and the appliance. A tee cap (TC) or drain-tee cap (DC) may be used to block one of the cleaning or drainage openings.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 1.25



| I.D. | CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|------|---------------------|--------|------|-----|--------|--------|------|-----|----------------------|--------|------|-----|
| | A | | B | | A | | B | | A | | B | |
| | in | in | mm | mm | in | in | mm | mm | in | in | mm | mm |
| 6 | 19.000 | 9.500 | 483 | 241 | 23.000 | 11.500 | 584 | 292 | 17.000 | 8.500 | 432 | 216 |
| 8 | 21.000 | 10.500 | 533 | 267 | 25.000 | 12.500 | 635 | 318 | 19.000 | 9.500 | 483 | 241 |
| 10 | 23.000 | 11.500 | 584 | 292 | 27.000 | 13.500 | 686 | 343 | 21.000 | 10.500 | 533 | 267 |
| 12 | 25.000 | 12.500 | 635 | 318 | 29.000 | 14.500 | 737 | 368 | 23.000 | 11.500 | 584 | 292 |
| 14 | 27.000 | 13.500 | 686 | 343 | 31.000 | 15.500 | 787 | 394 | 25.000 | 12.500 | 635 | 318 |
| 16 | 29.000 | 14.500 | 737 | 368 | 33.000 | 16.500 | 838 | 419 | 27.000 | 13.500 | 686 | 343 |
| 18 | 31.000 | 15.500 | 787 | 394 | 35.000 | 17.500 | 889 | 445 | 29.000 | 14.500 | 737 | 368 |
| 20 | 33.000 | 16.500 | 838 | 419 | 37.000 | 18.500 | 940 | 470 | 31.000 | 15.500 | 787 | 394 |
| 22 | 35.000 | 17.500 | 889 | 445 | 39.000 | 19.500 | 991 | 495 | 33.000 | 16.500 | 838 | 419 |
| 24 | 37.000 | 18.500 | 940 | 470 | 41.000 | 20.500 | 1041 | 521 | 35.000 | 17.500 | 889 | 445 |
| 26 | 39.000 | 19.500 | 991 | 495 | 43.000 | 21.500 | 1092 | 546 | 37.000 | 18.500 | 940 | 470 |
| 28 | 41.000 | 20.500 | 1041 | 521 | 45.000 | 22.500 | 1143 | 572 | 39.000 | 19.500 | 991 | 495 |
| 30 | 43.000 | 21.500 | 1092 | 546 | 47.000 | 23.500 | 1194 | 597 | 41.000 | 20.500 | 1041 | 521 |
| 32 | 45.000 | 22.500 | 1143 | 572 | 49.000 | 24.500 | 1245 | 622 | 43.000 | 21.500 | 1092 | 546 |
| 34 | 47.000 | 23.500 | 1194 | 597 | 51.000 | 25.500 | 1295 | 648 | 45.000 | 22.500 | 1143 | 572 |
| 36 | 49.000 | 24.500 | 1245 | 622 | 53.000 | 26.500 | 1346 | 673 | 47.000 | 23.500 | 1194 | 597 |
| 38 | 51.000 | 25.500 | 1295 | 648 | 55.000 | 27.500 | 1397 | 699 | 49.000 | 24.500 | 1245 | 622 |
| 40 | 53.000 | 26.500 | 1346 | 673 | 57.000 | 28.500 | 1448 | 724 | 51.000 | 25.500 | 1295 | 648 |
| 42 | 55.000 | 27.500 | 1397 | 699 | 59.000 | 29.500 | 1499 | 749 | 53.000 | 26.500 | 1346 | 673 |
| 44 | 57.000 | 28.500 | 1448 | 724 | 61.000 | 30.500 | 1549 | 775 | 55.000 | 27.500 | 1397 | 699 |
| 46 | 59.000 | 29.500 | 1499 | 749 | 63.000 | 31.500 | 1600 | 800 | 57.000 | 28.500 | 1448 | 724 |
| 48 | 61.000 | 30.500 | 1549 | 775 | 65.000 | 32.500 | 1651 | 826 | 59.000 | 29.500 | 1499 | 749 |

ELBOWS

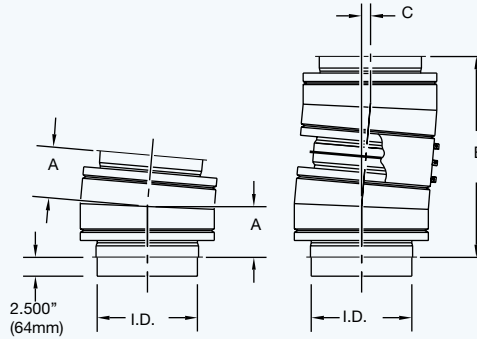
5° ELBOW • E5

Used to offset the flue or chimney by 5°. May be used to slope a flue to facilitate condensation water run-off.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.04



| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|-----|--------|-----|-------|----|--------|-----|--------|-----|-------|----|----------------------|-----|--------|-----|-------|----|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 6.631 | 168 | 26.473 | 672 | 1.156 | 29 | 7.631 | 194 | 30.466 | 774 | 1.33 | 34 | 5.131 | 130 | 20.485 | 520 | 0.894 | 23 |
| 8 | 203 | 6.675 | 170 | 26.648 | 677 | 1.163 | 30 | 7.675 | 195 | 30.64 | 778 | 1.338 | 34 | 5.175 | 131 | 20.659 | 525 | 0.902 | 23 |
| 10 | 254 | 6.718 | 171 | 26.822 | 681 | 1.171 | 30 | 7.718 | 196 | 30.814 | 783 | 1.345 | 34 | 5.218 | 133 | 20.834 | 529 | 0.91 | 23 |
| 12 | 305 | 6.762 | 172 | 26.996 | 686 | 1.179 | 30 | 7.762 | 197 | 30.989 | 787 | 1.353 | 34 | 5.262 | 134 | 21.008 | 534 | 0.917 | 23 |
| 14 | 356 | 6.806 | 173 | 27.171 | 690 | 1.186 | 30 | 7.806 | 198 | 31.163 | 792 | 1.361 | 35 | 5.306 | 135 | 21.182 | 538 | 0.925 | 23 |
| 16 | 406 | 6.849 | 174 | 27.345 | 695 | 1.194 | 30 | 7.849 | 199 | 31.337 | 796 | 1.368 | 35 | 5.349 | 136 | 21.356 | 542 | 0.932 | 24 |
| 18 | 457 | 6.893 | 175 | 27.519 | 699 | 1.202 | 31 | 7.893 | 200 | 31.512 | 800 | 1.376 | 35 | 5.393 | 137 | 21.531 | 547 | 0.94 | 24 |
| 20 | 508 | 6.937 | 176 | 27.694 | 703 | 1.209 | 31 | 7.937 | 202 | 31.686 | 805 | 1.383 | 35 | 5.437 | 138 | 21.705 | 551 | 0.948 | 24 |
| 22 | 559 | 6.98 | 177 | 27.868 | 708 | 1.217 | 31 | 7.98 | 203 | 31.86 | 809 | 1.391 | 35 | 5.48 | 139 | 21.879 | 556 | 0.955 | 24 |
| 24 | 610 | 7.024 | 178 | 28.042 | 712 | 1.224 | 31 | 8.024 | 204 | 32.035 | 814 | 1.399 | 36 | 5.524 | 140 | 22.054 | 560 | 0.963 | 24 |
| 26 | 660 | 7.068 | 180 | 28.217 | 717 | 1.232 | 31 | 8.068 | 205 | 32.209 | 818 | 1.406 | 36 | 5.568 | 141 | 22.228 | 565 | 0.97 | 25 |
| 28 | 711 | 7.111 | 181 | 28.391 | 721 | 1.24 | 31 | 8.111 | 206 | 32.383 | 823 | 1.414 | 36 | 5.611 | 143 | 22.402 | 569 | 0.978 | 25 |
| 30 | 762 | 7.155 | 182 | 28.565 | 726 | 1.247 | 32 | 8.155 | 207 | 32.558 | 827 | 1.421 | 36 | 5.655 | 144 | 22.577 | 573 | 0.986 | 25 |
| 32 | 813 | 7.199 | 183 | 28.74 | 730 | 1.255 | 32 | 8.199 | 208 | 32.732 | 831 | 1.429 | 36 | 5.699 | 145 | 22.751 | 578 | 0.993 | 25 |
| 34 | 864 | 7.242 | 184 | 28.914 | 734 | 1.262 | 32 | 8.242 | 209 | 32.906 | 836 | 1.437 | 36 | 5.742 | 146 | 22.925 | 582 | 1.001 | 25 |
| 36 | 914 | 7.286 | 185 | 29.088 | 739 | 1.27 | 32 | 8.286 | 210 | 33.081 | 840 | 1.444 | 37 | 5.786 | 147 | 23.1 | 587 | 1.009 | 26 |
| 38 | 965 | 7.33 | 186 | 29.262 | 743 | 1.278 | 32 | 8.33 | 212 | 33.255 | 845 | 1.452 | 37 | 5.83 | 148 | 23.274 | 591 | 1.016 | 26 |
| 40 | 1016 | 7.373 | 187 | 29.437 | 748 | 1.285 | 33 | 8.373 | 213 | 33.429 | 849 | 1.46 | 37 | 5.873 | 149 | 23.448 | 596 | 1.024 | 26 |
| 42 | 1067 | 7.417 | 188 | 29.611 | 752 | 1.293 | 33 | 8.417 | 214 | 33.603 | 854 | 1.467 | 37 | 5.917 | 150 | 23.622 | 600 | 1.031 | 26 |
| 44 | 1118 | 7.461 | 189 | 29.785 | 757 | 1.3 | 33 | 8.461 | 215 | 33.778 | 858 | 1.475 | 37 | 5.961 | 151 | 23.797 | 604 | 1.039 | 26 |
| 46 | 1168 | 7.504 | 191 | 29.96 | 761 | 1.308 | 33 | 8.504 | 216 | 33.952 | 862 | 1.482 | 38 | 6.004 | 153 | 23.971 | 609 | 1.047 | 27 |
| 48 | 1219 | 7.548 | 192 | 30.134 | 765 | 1.316 | 33 | 8.548 | 217 | 34.126 | 867 | 1.49 | 38 | 6.048 | 154 | 24.145 | 613 | 1.054 | 27 |

ELBOWS

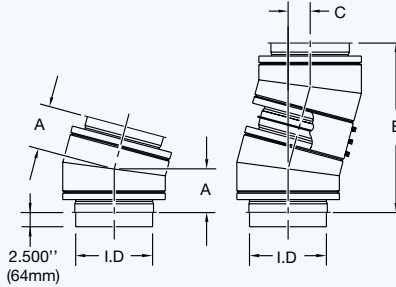
15° ELBOW • E15

Used to offset the flue or chimney by 15°.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.06



| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|-----|--------|-----|-------|-----|--------|-----|--------|------|-------|-----|----------------------|-----|--------|-----|-------|-----|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 6.895 | 175 | 27.11 | 689 | 3.569 | 91 | 7.895 | 201 | 31.042 | 788 | 4.087 | 104 | 5.395 | 137 | 21.212 | 539 | 2.793 | 71 |
| 8 | 203 | 7.027 | 178 | 27.628 | 702 | 3.637 | 92 | 8.027 | 204 | 31.559 | 802 | 4.155 | 106 | 5.527 | 140 | 21.73 | 552 | 2.861 | 73 |
| 10 | 254 | 7.158 | 182 | 28.145 | 715 | 3.705 | 94 | 8.158 | 207 | 32.077 | 815 | 4.223 | 107 | 5.658 | 144 | 22.247 | 565 | 2.929 | 74 |
| 12 | 305 | 7.29 | 185 | 28.663 | 728 | 3.774 | 96 | 8.29 | 211 | 32.595 | 828 | 4.291 | 109 | 5.79 | 147 | 22.765 | 578 | 2.997 | 76 |
| 14 | 356 | 7.422 | 189 | 29.181 | 741 | 3.842 | 98 | 8.422 | 214 | 33.112 | 841 | 4.359 | 111 | 5.922 | 150 | 23.283 | 591 | 3.065 | 78 |
| 16 | 406 | 7.553 | 192 | 29.698 | 754 | 3.91 | 99 | 8.553 | 217 | 33.63 | 854 | 4.427 | 112 | 6.053 | 154 | 23.8 | 605 | 3.133 | 80 |
| 18 | 457 | 7.685 | 195 | 30.216 | 767 | 3.978 | 101 | 8.685 | 221 | 34.148 | 867 | 4.496 | 114 | 6.185 | 157 | 24.318 | 618 | 3.202 | 81 |
| 20 | 508 | 7.817 | 199 | 30.733 | 781 | 4.046 | 103 | 8.817 | 224 | 34.665 | 880 | 4.564 | 116 | 6.317 | 160 | 24.836 | 631 | 3.27 | 83 |
| 22 | 559 | 7.948 | 202 | 31.251 | 794 | 4.114 | 105 | 8.948 | 227 | 35.183 | 894 | 4.632 | 118 | 6.448 | 164 | 25.353 | 644 | 3.338 | 85 |
| 24 | 610 | 8.08 | 205 | 31.769 | 807 | 4.182 | 106 | 9.08 | 231 | 35.701 | 907 | 4.7 | 119 | 6.58 | 167 | 25.871 | 657 | 3.406 | 87 |
| 26 | 660 | 8.211 | 209 | 32.286 | 820 | 4.251 | 108 | 9.211 | 234 | 36.218 | 920 | 4.768 | 121 | 6.711 | 170 | 26.389 | 670 | 3.474 | 88 |
| 28 | 711 | 8.343 | 212 | 32.804 | 833 | 4.319 | 110 | 9.343 | 237 | 36.736 | 933 | 4.836 | 123 | 6.843 | 174 | 26.906 | 683 | 3.542 | 90 |
| 30 | 762 | 8.475 | 215 | 33.322 | 846 | 4.387 | 111 | 9.475 | 241 | 37.253 | 946 | 4.905 | 125 | 6.975 | 177 | 27.424 | 697 | 3.61 | 92 |
| 32 | 813 | 8.606 | 219 | 33.839 | 860 | 4.455 | 113 | 9.606 | 244 | 37.771 | 959 | 4.973 | 126 | 7.106 | 181 | 27.941 | 710 | 3.679 | 93 |
| 34 | 864 | 8.738 | 222 | 34.357 | 873 | 4.523 | 115 | 9.738 | 247 | 38.289 | 973 | 5.041 | 128 | 7.238 | 184 | 28.459 | 723 | 3.747 | 95 |
| 36 | 914 | 8.87 | 225 | 34.875 | 886 | 4.591 | 117 | 9.87 | 251 | 38.806 | 986 | 5.109 | 130 | 7.37 | 187 | 28.977 | 736 | 3.815 | 97 |
| 38 | 965 | 9.001 | 229 | 35.392 | 899 | 4.659 | 118 | 10.001 | 254 | 39.324 | 999 | 5.177 | 131 | 7.501 | 191 | 29.494 | 749 | 3.883 | 99 |
| 40 | 1016 | 9.133 | 232 | 35.91 | 912 | 4.728 | 120 | 10.133 | 257 | 39.842 | 1012 | 5.245 | 133 | 7.633 | 194 | 30.012 | 762 | 3.951 | 100 |
| 42 | 1067 | 9.265 | 235 | 36.427 | 925 | 4.796 | 122 | 10.265 | 261 | 40.359 | 1025 | 5.313 | 135 | 7.765 | 197 | 30.53 | 775 | 4.019 | 102 |
| 44 | 1118 | 9.396 | 239 | 36.945 | 938 | 4.864 | 124 | 10.396 | 264 | 40.877 | 1038 | 5.382 | 137 | 7.896 | 201 | 31.047 | 789 | 4.087 | 104 |
| 46 | 1168 | 9.528 | 242 | 37.463 | 952 | 4.932 | 125 | 10.528 | 267 | 41.395 | 1051 | 5.45 | 138 | 8.028 | 204 | 31.565 | 802 | 4.156 | 106 |
| 48 | 1219 | 9.66 | 245 | 37.98 | 965 | 5 | 127 | 10.66 | 271 | 41.912 | 1065 | 5.518 | 140 | 8.16 | 207 | 32.083 | 815 | 4.224 | 107 |

ELBOWS

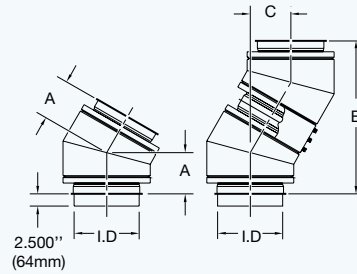
30° ELBOW • E30

Used to offset the flue or chimney by 30°.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.12



| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|-----|--------|------|--------|-----|--------|-----|-------|------|--------|-----|----------------------|-----|-------|------|--------|-----|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 7.304 | 186 | 27.258 | 692 | 7.304 | 186 | 8.304 | 211 | 30.99 | 787 | 8.304 | 211 | 5.804 | 147 | 21.66 | 550 | 5.804 | 147 |
| 8 | 203 | 7.572 | 192 | 28.258 | 718 | 7.572 | 192 | 8.572 | 218 | 31.99 | 813 | 8.572 | 218 | 6.072 | 154 | 22.66 | 576 | 6.072 | 154 |
| 10 | 254 | 7.84 | 199 | 29.258 | 743 | 7.84 | 199 | 8.84 | 225 | 32.99 | 838 | 8.84 | 225 | 6.34 | 161 | 23.66 | 601 | 6.34 | 161 |
| 12 | 305 | 8.108 | 206 | 30.258 | 769 | 8.108 | 206 | 9.108 | 231 | 33.99 | 863 | 9.108 | 231 | 6.608 | 168 | 24.66 | 626 | 6.608 | 168 |
| 14 | 356 | 8.376 | 213 | 31.258 | 794 | 8.376 | 213 | 9.376 | 238 | 34.99 | 889 | 9.376 | 238 | 6.876 | 175 | 25.66 | 652 | 6.876 | 175 |
| 16 | 406 | 8.644 | 220 | 32.258 | 819 | 8.644 | 220 | 9.644 | 245 | 35.99 | 914 | 9.644 | 245 | 7.144 | 181 | 26.66 | 677 | 7.144 | 181 |
| 18 | 457 | 8.912 | 226 | 33.258 | 845 | 8.912 | 226 | 9.912 | 252 | 36.99 | 940 | 9.912 | 252 | 7.412 | 188 | 27.66 | 703 | 7.412 | 188 |
| 20 | 508 | 9.179 | 233 | 34.258 | 870 | 9.179 | 233 | 10.179 | 259 | 37.99 | 965 | 10.179 | 259 | 7.679 | 195 | 28.66 | 728 | 7.679 | 195 |
| 22 | 559 | 9.447 | 240 | 35.258 | 896 | 9.447 | 240 | 10.447 | 265 | 38.99 | 990 | 10.447 | 265 | 7.947 | 202 | 29.66 | 753 | 7.947 | 202 |
| 24 | 610 | 9.715 | 247 | 36.258 | 921 | 9.715 | 247 | 10.715 | 272 | 39.99 | 1016 | 10.715 | 272 | 8.215 | 209 | 30.66 | 779 | 8.215 | 209 |
| 26 | 660 | 9.983 | 254 | 37.258 | 946 | 9.983 | 254 | 10.983 | 279 | 40.99 | 1041 | 10.983 | 279 | 8.483 | 215 | 31.66 | 804 | 8.483 | 215 |
| 28 | 711 | 10.251 | 260 | 38.258 | 972 | 10.251 | 260 | 11.251 | 286 | 41.99 | 1067 | 11.251 | 286 | 8.751 | 222 | 32.66 | 830 | 8.751 | 222 |
| 30 | 762 | 10.519 | 267 | 39.258 | 997 | 10.519 | 267 | 11.519 | 293 | 42.99 | 1092 | 11.519 | 293 | 9.019 | 229 | 33.66 | 855 | 9.019 | 229 |
| 32 | 813 | 10.787 | 274 | 40.258 | 1023 | 10.787 | 274 | 11.787 | 299 | 43.99 | 1117 | 11.787 | 299 | 9.287 | 236 | 34.66 | 880 | 9.287 | 236 |
| 34 | 864 | 11.055 | 281 | 41.258 | 1048 | 11.055 | 281 | 12.055 | 306 | 44.99 | 1143 | 12.055 | 306 | 9.555 | 243 | 35.66 | 906 | 9.555 | 243 |
| 36 | 914 | 11.323 | 288 | 42.258 | 1073 | 11.323 | 288 | 12.323 | 313 | 45.99 | 1168 | 12.323 | 313 | 9.823 | 250 | 36.66 | 931 | 9.823 | 250 |
| 38 | 965 | 11.591 | 294 | 43.258 | 1099 | 11.591 | 294 | 12.591 | 320 | 46.99 | 1194 | 12.591 | 320 | 10.091 | 256 | 37.66 | 957 | 10.091 | 256 |
| 40 | 1016 | 11.859 | 301 | 44.258 | 1124 | 11.859 | 301 | 12.859 | 327 | 47.99 | 1219 | 12.859 | 327 | 10.359 | 263 | 38.66 | 982 | 10.359 | 263 |
| 42 | 1067 | 12.127 | 308 | 45.258 | 1150 | 12.127 | 308 | 13.127 | 333 | 48.99 | 1244 | 13.127 | 333 | 10.627 | 270 | 39.66 | 1007 | 10.627 | 270 |
| 44 | 1118 | 12.395 | 315 | 46.258 | 1175 | 12.395 | 315 | 13.395 | 340 | 49.99 | 1270 | 13.395 | 340 | 10.895 | 277 | 40.66 | 1033 | 10.895 | 277 |
| 46 | 1168 | 12.663 | 322 | 47.258 | 1200 | 12.663 | 322 | 13.663 | 347 | 50.99 | 1295 | 13.663 | 347 | 11.163 | 284 | 41.66 | 1058 | 11.163 | 284 |
| 48 | 1219 | 12.931 | 328 | 48.258 | 1226 | 12.931 | 328 | 13.931 | 354 | 51.99 | 1321 | 13.931 | 354 | 11.431 | 290 | 42.66 | 1084 | 11.431 | 290 |

ELBOWS

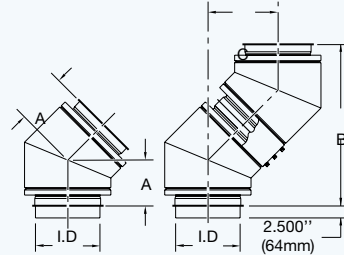
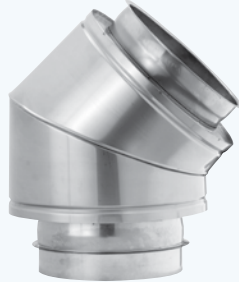
45° ELBOW • E45

Used to offset the flue or chimney by 45°.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.15



| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|-----|--------|------|--------|-----|--------|-----|--------|------|--------|-----|----------------------|-----|--------|------|--------|-----|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 7.743 | 197 | 26.435 | 671 | 10.95 | 278 | 8.743 | 222 | 29.849 | 758 | 12.364 | 314 | 6.243 | 159 | 21.314 | 541 | 8.828 | 224 |
| 8 | 203 | 8.157 | 207 | 27.849 | 707 | 11.536 | 293 | 9.157 | 233 | 31.263 | 794 | 12.95 | 329 | 6.657 | 169 | 22.728 | 577 | 9.414 | 239 |
| 10 | 254 | 8.571 | 218 | 29.263 | 743 | 12.121 | 308 | 9.571 | 243 | 32.678 | 830 | 13.536 | 344 | 7.071 | 180 | 24.142 | 613 | 10 | 254 |
| 12 | 305 | 8.985 | 228 | 30.678 | 779 | 12.707 | 323 | 9.985 | 254 | 34.092 | 866 | 14.121 | 359 | 7.485 | 190 | 25.556 | 649 | 10.586 | 269 |
| 14 | 356 | 9.399 | 239 | 32.092 | 815 | 13.293 | 338 | 10.399 | 264 | 35.506 | 902 | 14.707 | 374 | 7.899 | 201 | 26.971 | 685 | 11.172 | 284 |
| 16 | 406 | 9.814 | 249 | 33.506 | 851 | 13.879 | 353 | 10.814 | 275 | 36.92 | 938 | 15.293 | 388 | 8.314 | 211 | 28.385 | 721 | 11.757 | 299 |
| 18 | 457 | 10.228 | 260 | 34.92 | 887 | 14.464 | 367 | 11.228 | 285 | 38.335 | 974 | 15.879 | 403 | 8.728 | 222 | 29.799 | 757 | 12.343 | 314 |
| 20 | 508 | 10.642 | 270 | 36.335 | 923 | 15.05 | 382 | 11.642 | 296 | 39.749 | 1010 | 16.464 | 418 | 9.142 | 232 | 31.213 | 793 | 12.929 | 328 |
| 22 | 559 | 11.056 | 281 | 37.749 | 959 | 15.636 | 397 | 12.056 | 306 | 41.163 | 1046 | 17.05 | 433 | 9.556 | 243 | 32.627 | 829 | 13.515 | 343 |
| 24 | 610 | 11.471 | 291 | 39.163 | 995 | 16.222 | 412 | 12.471 | 317 | 42.577 | 1081 | 17.636 | 448 | 9.971 | 253 | 34.042 | 865 | 14.101 | 358 |
| 26 | 660 | 11.885 | 302 | 40.577 | 1031 | 16.808 | 427 | 12.885 | 327 | 43.991 | 1117 | 18.222 | 463 | 10.385 | 264 | 35.456 | 901 | 14.686 | 373 |
| 28 | 711 | 12.299 | 312 | 41.991 | 1067 | 17.393 | 442 | 13.299 | 338 | 45.406 | 1153 | 18.808 | 478 | 10.799 | 274 | 36.87 | 936 | 15.272 | 388 |
| 30 | 762 | 12.713 | 323 | 43.406 | 1103 | 17.979 | 457 | 13.713 | 348 | 46.82 | 1189 | 19.393 | 493 | 11.213 | 285 | 38.284 | 972 | 15.858 | 403 |
| 32 | 813 | 13.127 | 333 | 44.82 | 1138 | 18.565 | 472 | 14.127 | 359 | 48.234 | 1225 | 19.979 | 507 | 11.627 | 295 | 39.698 | 1008 | 16.444 | 418 |
| 34 | 864 | 13.542 | 344 | 46.234 | 1174 | 19.151 | 486 | 14.542 | 369 | 49.648 | 1261 | 20.565 | 522 | 12.042 | 306 | 41.113 | 1044 | 17.029 | 433 |
| 36 | 914 | 13.956 | 354 | 47.648 | 1210 | 19.737 | 501 | 14.956 | 380 | 51.062 | 1297 | 21.151 | 537 | 12.456 | 316 | 42.527 | 1080 | 17.615 | 447 |
| 38 | 965 | 14.37 | 365 | 49.062 | 1246 | 20.322 | 516 | 15.37 | 390 | 52.477 | 1333 | 21.737 | 552 | 12.87 | 327 | 43.941 | 1116 | 18.201 | 462 |
| 40 | 1016 | 14.784 | 376 | 50.477 | 1282 | 20.908 | 531 | 15.784 | 401 | 53.891 | 1369 | 22.322 | 567 | 13.284 | 337 | 45.355 | 1152 | 18.787 | 477 |
| 42 | 1067 | 15.198 | 386 | 51.891 | 1318 | 21.494 | 546 | 16.198 | 411 | 55.305 | 1405 | 22.908 | 582 | 13.698 | 348 | 46.77 | 1188 | 19.373 | 492 |
| 44 | 1118 | 15.613 | 397 | 53.305 | 1354 | 22.08 | 561 | 16.613 | 422 | 56.719 | 1441 | 23.494 | 597 | 14.113 | 358 | 48.184 | 1224 | 19.958 | 507 |
| 46 | 1168 | 16.027 | 407 | 54.719 | 1390 | 22.665 | 576 | 17.027 | 432 | 58.134 | 1477 | 24.08 | 612 | 14.527 | 369 | 49.598 | 1260 | 20.544 | 522 |
| 48 | 1219 | 16.441 | 418 | 56.134 | 1426 | 23.251 | 591 | 17.441 | 443 | 59.548 | 1513 | 24.665 | 627 | 14.941 | 380 | 51.012 | 1296 | 21.13 | 537 |

ELBOWS

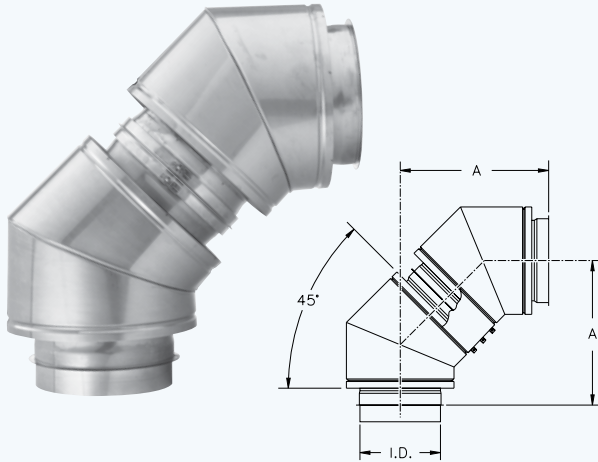
90° ELBOW • 2 x E45

Used to change orientation of flue or chimney by 90°.

Includes:

- 2 45° Elbows (E45)
- 2 Assembly bands (AB)
- 2 Finishing bands (FB)

K = 0.3



| I.D. | | CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, CBIL1, CBIL1F | |
|------|------|------------------------|------|--------|------|-------------------------|-----|
| | | A | | A | | A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 18.692 | 475 | 21.107 | 536 | 15.071 | 383 |
| 8 | 203 | 19.692 | 500 | 22.107 | 562 | 16.071 | 408 |
| 10 | 254 | 20.692 | 526 | 23.107 | 587 | 17.071 | 434 |
| 12 | 305 | 21.692 | 551 | 24.107 | 612 | 18.071 | 459 |
| 14 | 356 | 22.692 | 576 | 25.107 | 638 | 19.071 | 484 |
| 16 | 406 | 23.692 | 602 | 26.107 | 663 | 20.071 | 510 |
| 18 | 457 | 24.692 | 627 | 27.107 | 689 | 21.071 | 535 |
| 20 | 508 | 25.692 | 653 | 28.107 | 714 | 22.071 | 561 |
| 22 | 559 | 26.692 | 678 | 29.107 | 739 | 23.071 | 586 |
| 24 | 610 | 27.692 | 703 | 30.107 | 765 | 24.071 | 611 |
| 26 | 660 | 28.692 | 729 | 31.107 | 790 | 25.071 | 637 |
| 28 | 711 | 29.692 | 754 | 32.107 | 816 | 26.071 | 662 |
| 30 | 762 | 30.692 | 780 | 33.107 | 841 | 27.071 | 688 |
| 32 | 813 | 31.692 | 805 | 34.107 | 866 | 28.071 | 713 |
| 34 | 864 | 32.692 | 830 | 35.107 | 892 | 29.071 | 738 |
| 36 | 914 | 33.692 | 856 | 36.107 | 917 | 30.071 | 764 |
| 38 | 965 | 34.692 | 881 | 37.107 | 943 | 31.071 | 789 |
| 40 | 1016 | 35.692 | 907 | 38.107 | 968 | 32.071 | 815 |
| 42 | 1067 | 36.692 | 932 | 39.107 | 993 | 33.071 | 840 |
| 44 | 1118 | 37.692 | 957 | 40.107 | 1019 | 34.071 | 865 |
| 46 | 1168 | 38.692 | 983 | 41.107 | 1044 | 35.071 | 891 |
| 48 | 1219 | 39.692 | 1008 | 42.107 | 1070 | 36.071 | 916 |

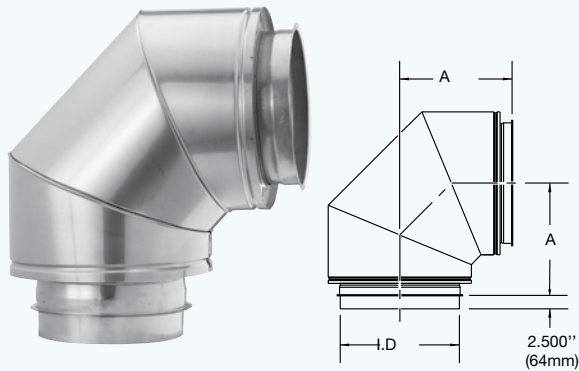
90° SHORT RADIUS ELBOW • E90

Used to change orientation of flue or chimney by 90°.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

K = 0.3



| I.D. | | CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, CBIL1, CBIL1F | |
|------|------|------------------------|-----|--------|-----|-------------------------|-----|
| | | A | | A | | A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 12.328 | 313 | 14.743 | 374 | 10.121 | 257 |
| 8 | 203 | 13.328 | 339 | 15.743 | 400 | 11.121 | 282 |
| 10 | 254 | 14.328 | 364 | 16.743 | 425 | 12.121 | 308 |
| 12 | 305 | 15.328 | 389 | 17.743 | 451 | 13.121 | 333 |
| 14 | 356 | 16.328 | 415 | 18.743 | 476 | 14.121 | 359 |
| 16 | 406 | 17.328 | 440 | 19.743 | 501 | 15.121 | 384 |
| 18 | 457 | 18.328 | 466 | 20.743 | 527 | 16.121 | 409 |
| 20 | 508 | 19.328 | 491 | 21.743 | 552 | 17.121 | 435 |
| 22 | 559 | 20.328 | 516 | 22.743 | 578 | 18.121 | 460 |
| 24 | 610 | 21.328 | 542 | 23.743 | 603 | 19.121 | 486 |
| 26 | 660 | 22.328 | 567 | 24.743 | 628 | 20.121 | 511 |
| 28 | 711 | 23.328 | 593 | 25.743 | 654 | 21.121 | 536 |
| 30 | 762 | 24.328 | 618 | 26.743 | 679 | 22.121 | 562 |
| 32 | 813 | 25.328 | 643 | 27.743 | 705 | 23.121 | 587 |
| 34 | 864 | 26.328 | 669 | 28.743 | 730 | 24.121 | 613 |
| 36 | 914 | 27.328 | 694 | 29.743 | 755 | 25.121 | 638 |
| 38 | 965 | 28.328 | 720 | 30.743 | 781 | 26.121 | 663 |
| 40 | 1016 | 29.328 | 745 | 31.743 | 806 | 27.121 | 689 |
| 42 | 1067 | 30.328 | 770 | 32.743 | 832 | 28.121 | 714 |
| 44 | 1118 | 31.328 | 796 | 33.743 | 857 | 29.121 | 740 |
| 46 | 1168 | 32.328 | 821 | 34.743 | 882 | 30.121 | 765 |
| 48 | 1219 | 33.328 | 847 | 35.743 | 908 | 31.121 | 790 |

FITTINGS

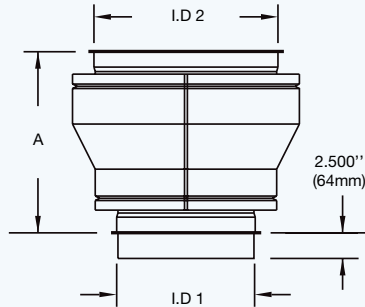
INCREASER • I

Used to increase the diameter of the flue or chimney. Specify the diameter of the inlet and outlet of the fitting.

Includes:

- 1 Assembly band (I.D. 2) (AB)
- 1 Finishing band (O.D. 2) (FB)

$$K = 0.5 \left(1 - \left(\frac{I.D.1}{I.D.2} \right)^2 \right)^2$$



| Difference between I.D. 2 - I.D. 1 | All Products | |
|------------------------------------|--------------|-----|
| | Dim. A | |
| | in | mm |
| 2 | 14.5 | 368 |
| 4 | 18.5 | 470 |
| 6 | 22.5 | 572 |
| 8 | 26.5 | 673 |
| 10 | 30.5 | 775 |

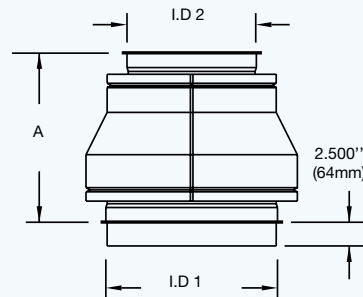
REDUCER • R

Used to reduce the diameter of the flue. Specify the diameter of the inlet and outlet of the fitting.

Includes:

- 1 Assembly band (I.D. 2) (AB)
- 1 Finishing band (O.D. 2) (FB)

$$K = 0.5 \left(1 - \left(\frac{I.D.1}{I.D.2} \right)^2 \right)^2$$



| Difference between I.D. 2 - I.D. 1 | All Products | |
|------------------------------------|--------------|-----|
| | Dim. A | |
| | in | mm |
| 2 | 14.5 | 368 |
| 4 | 18.5 | 470 |
| 6 | 22.5 | 572 |
| 8 | 26.5 | 673 |
| 10 | 30.5 | 775 |

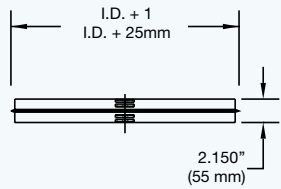
FITTINGS

ASSEMBLY BAND • AB

Used to assemble the inner walls of two components. Ensures sealing and rigidity of the system. To be used with a Low (LTS) or a High Temperature Sealant (HTS) (see assembly details).

Includes:

- 2 Hexagonal screws
- 2 Square nuts

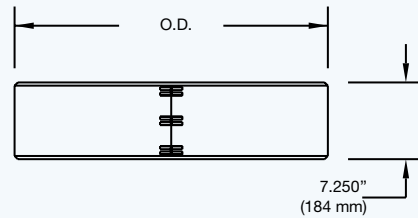


FINISHING BAND • FB

Used to assemble the outer walls of two components. Ensures sealing and rigidity of double wall systems. To be used with an Exterior Sealant (ES) on outside exposed parts.

Includes:

- 3 Hexagonal screws
- 3 Square nut
- 1 Insulation strip for CBGL2F systems

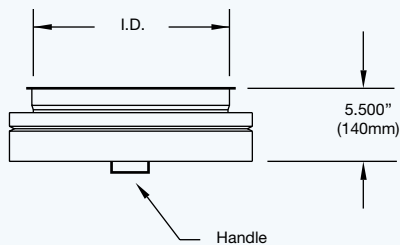
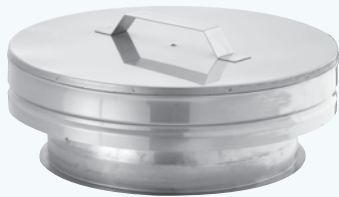


TEE CAP • TC

Used to block one of the openings of horizontal or vertical tee. Removable, it facilitates access for inspection and maintenance of the chimney.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (AB)

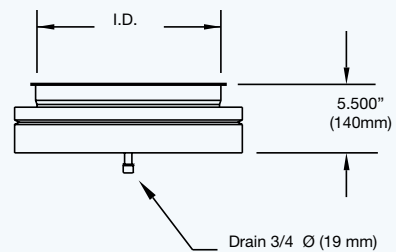
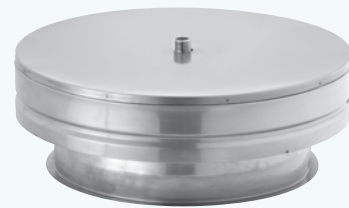


DRAIN-TEE CAP • DC

Used to cover one of the vertical openings of tee. For collection of rainwater or condensation water. Removable, it facilitates access for inspection and maintenance of the chimney. To be connected to a drain of 3/4ø (19mm) - NPT.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)



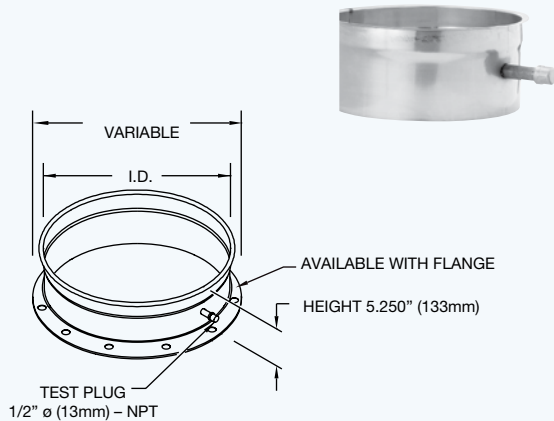
SUPPORTS AND ADAPTERS

STARTING ADAPTER • SA

Used to connect the flue to the appliance. It allows for sampling of the gases by means of a test plug.
Available with ANSI 150 lb flange.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band 8" (203mm) (FB)
- 1 2" wide flange
- 1 Insulation strip for CBIL2, CBIL2F and CBIL4F systems

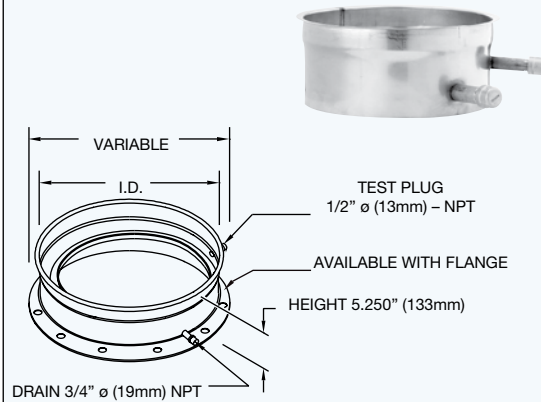


STARTING ADAPTER-DRAIN • SAD

Used to connect the flue to the appliance. It allows for sampling of the gases by means of a test plug, and collection of condensation water by means of a drain and an elliptical collar.
To be connected to a 1/2"ø (13mm) - 3/4"ø (19mm) - NPT drain.
Available with ANSI 150 lb flange.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band 8" (203mm) (FB)
- 1 2" wide flange
- 1 Insulation strip for CBIL2, CBIL2F and CBIL4F systems

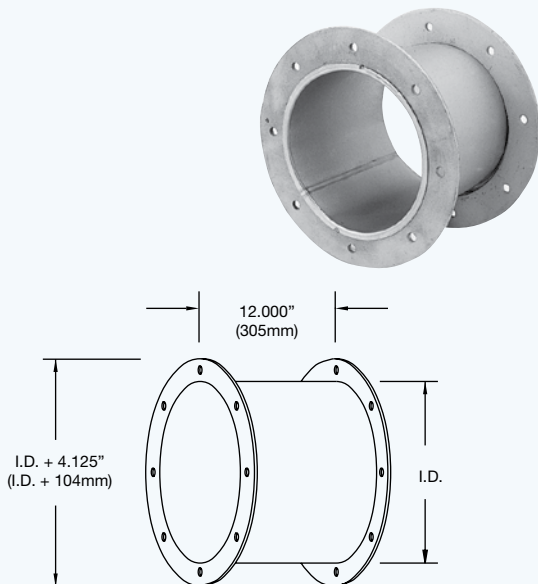


STARTING SLEEVE • SS

Used to connect the flue to the appliance. Removable, it facilitates access to the appliance for inspection and cleaning. To be used with 3/8"ø (19mm) nuts and bolts (not included).
Available with ANSI 150 lb flanges.

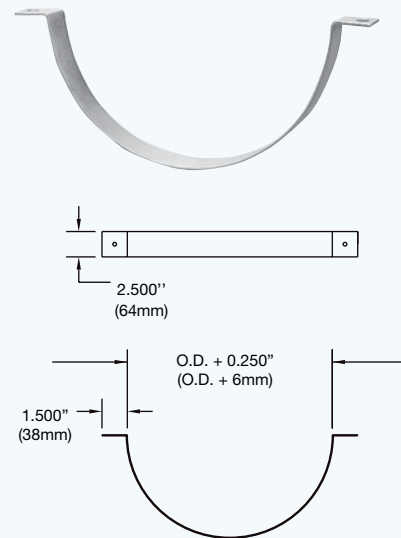
Includes:

- 2 2" Wide flange



HANGER BRACKET • HB

Used to support the flue in horizontal runs. To be installed by means of 3/8"ø (19mm) threaded rods (not included). Generally installed every 5'-0" (1525mm).



SUPPORTS

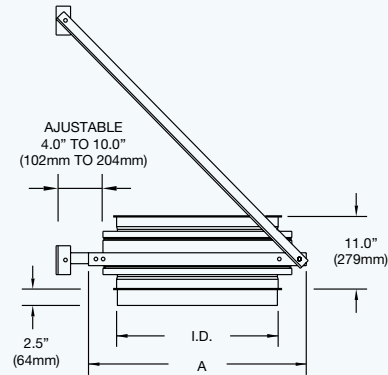
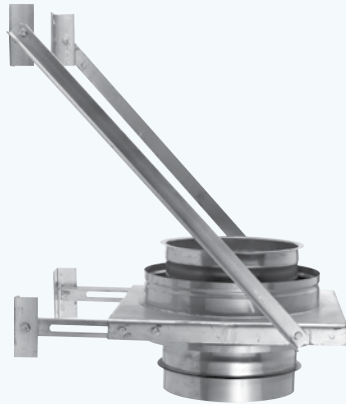
WALL SUPPORT • WS

Used to support the chimney in vertical runs. It keeps the chimney at an adjustable distance between 4" (102mm) and 10" (254mm) from the wall. The oblique braces may be attached to the wall either above or below the supporting surface.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)
- 2 Adjustable angles
- 2 Braces
- 4 Wall brackets

K = Same as pipe length



| I.D. | | CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, CBIL1, CBIL1F | |
|------|------|---------------------|------|--------|------|----------------------|------|
| | | A | | A | | A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 18 | 457 | 12 | 305 |
| 8 | 203 | 16 | 406 | 20 | 508 | 14 | 356 |
| 10 | 254 | 18 | 457 | 22 | 559 | 16 | 406 |
| 12 | 305 | 20 | 508 | 24 | 610 | 18 | 457 |
| 14 | 356 | 22 | 559 | 26 | 660 | 20 | 508 |
| 16 | 406 | 24 | 610 | 28 | 711 | 22 | 559 |
| 18 | 457 | 26 | 660 | 30 | 762 | 24 | 610 |
| 20 | 508 | 28 | 711 | 32 | 813 | 26 | 660 |
| 22 | 559 | 30 | 762 | 34 | 864 | 28 | 711 |
| 24 | 610 | 32 | 813 | 36 | 914 | 30 | 762 |
| 26 | 660 | 34 | 864 | 38 | 965 | 32 | 813 |
| 28 | 711 | 36 | 914 | 40 | 1016 | 34 | 864 |
| 30 | 762 | 38 | 965 | 42 | 1067 | 36 | 914 |
| 32 | 813 | 40 | 1016 | 44 | 1118 | 38 | 965 |
| 34 | 864 | 42 | 1067 | 46 | 1168 | 40 | 1016 |
| 36 | 914 | 44 | 1118 | 48 | 1219 | 42 | 1067 |
| 38 | 965 | 46 | 1168 | 50 | 1270 | 44 | 1118 |
| 40 | 1016 | 48 | 1219 | 52 | 1321 | 46 | 1168 |
| 42 | 1067 | 50 | 1270 | 54 | 1372 | 48 | 1219 |
| 44 | 1118 | 52 | 1321 | 56 | 1422 | 50 | 1270 |
| 46 | 1168 | 54 | 1372 | 58 | 1473 | 52 | 1321 |
| 48 | 1219 | 56 | 1422 | 60 | 1524 | 54 | 1372 |

SUPPORTS

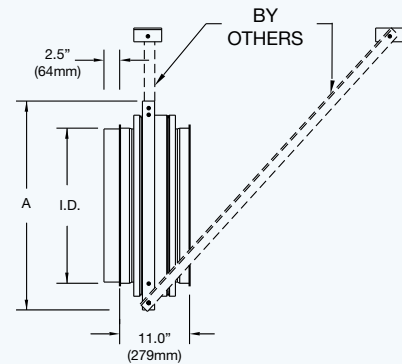
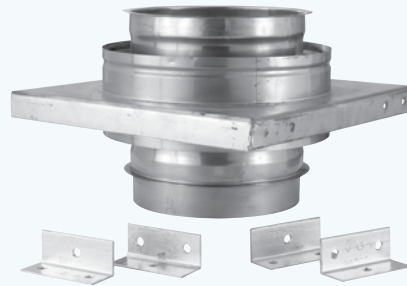
HORIZONTAL SUPPORT • HS

Used to support the flue in horizontal runs. It keeps the flue at an adjustable distance from the ceiling. The oblique braces (not included) may be attached to the ceiling either ahead of or behind the supporting surface.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)
- 4 Wall brackets

K = Same as pipe length



| I.D. | | CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, CBIL1, CBIL1F | |
|------|------|---------------------|------|--------|------|----------------------|------|
| | | A | | A | | A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 18 | 457 | 12 | 305 |
| 8 | 203 | 16 | 406 | 20 | 508 | 14 | 356 |
| 10 | 254 | 18 | 457 | 22 | 559 | 16 | 406 |
| 12 | 305 | 20 | 508 | 24 | 610 | 18 | 457 |
| 14 | 356 | 22 | 559 | 26 | 660 | 20 | 508 |
| 16 | 406 | 24 | 610 | 28 | 711 | 22 | 559 |
| 18 | 457 | 26 | 660 | 30 | 762 | 24 | 610 |
| 20 | 508 | 28 | 711 | 32 | 813 | 26 | 660 |
| 22 | 559 | 30 | 762 | 34 | 864 | 28 | 711 |
| 24 | 610 | 32 | 813 | 36 | 914 | 30 | 762 |
| 26 | 660 | 34 | 864 | 38 | 965 | 32 | 813 |
| 28 | 711 | 36 | 914 | 40 | 1016 | 34 | 864 |
| 30 | 762 | 38 | 965 | 42 | 1067 | 36 | 914 |
| 32 | 813 | 40 | 1016 | 44 | 1118 | 38 | 965 |
| 34 | 864 | 42 | 1067 | 46 | 1168 | 40 | 1016 |
| 36 | 914 | 44 | 1118 | 48 | 1219 | 42 | 1067 |
| 38 | 965 | 46 | 1168 | 50 | 1270 | 44 | 1118 |
| 40 | 1016 | 48 | 1219 | 52 | 1321 | 46 | 1168 |
| 42 | 1067 | 50 | 1270 | 54 | 1372 | 48 | 1219 |
| 44 | 1118 | 52 | 1321 | 56 | 1422 | 50 | 1270 |
| 46 | 1168 | 54 | 1372 | 58 | 1473 | 52 | 1321 |
| 48 | 1219 | 56 | 1422 | 60 | 1524 | 54 | 1372 |

SUPPORT AND GUIDES

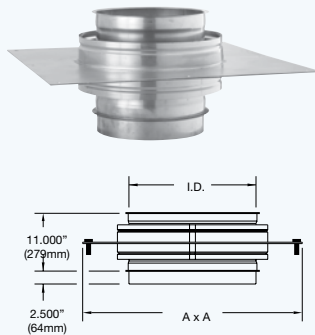
ANCHOR PLATE • AP

Used to support the chimney in vertical runs. It is attached to the floor by means of anchors (not included). It is designed to be supported on four (4) sides. Structural angles may be used to support sides that are unsupported.

Includes:

- 1 Assembly band (AB)
- 1 Finishing band (FB)

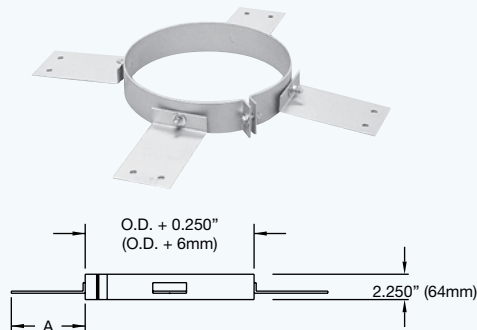
K = Same as pipe length



| CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|---------------------|------|------|------|--------|------|------|------|----------------------|------|-------|------|
| I.D. | | A | | I.D. | | A | | I.D. | | A | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 22.0 | 559 | 6 | 152 | 26.0 | 660 | 6 | 152 | 20.0 | 508 |
| 8 | 203 | 24.0 | 610 | 8 | 203 | 28.0 | 711 | 8 | 203 | 22.0 | 559 |
| 10 | 254 | 26.0 | 660 | 10 | 254 | 30.0 | 764 | 10 | 254 | 24.0 | 610 |
| 12 | 305 | 28.0 | 711 | 12 | 305 | 32.0 | 813 | 12 | 305 | 26.0 | 660 |
| 14 | 356 | 30.0 | 762 | 14 | 356 | 34.0 | 864 | 14 | 356 | 28.0 | 711 |
| 16 | 406 | 32.0 | 813 | 16 | 406 | 36.0 | 914 | 16 | 406 | 30.0 | 762 |
| 18 | 457 | 34.0 | 864 | 18 | 457 | 38.0 | 965 | 18 | 457 | 32.0 | 813 |
| 20 | 508 | 36.0 | 914 | 20 | 508 | 40.0 | 1016 | 20 | 508 | 34.0 | 864 |
| 22 | 559 | 38.0 | 965 | 22 | 559 | 42.0 | 1068 | 22 | 559 | 36.0 | 914 |
| 24 | 610 | 40.0 | 1016 | 24 | 610 | 44.0 | 1118 | 24 | 610 | 38.0 | 965 |
| 26 | 660 | 42.0 | 1068 | 26 | 660 | 46.0 | 1168 | 26 | 660 | 40.0 | 1016 |
| 28 | 711 | 44.0 | 1118 | 28 | 711 | 48.0 | 1219 | 28 | 711 | 42.00 | 1067 |
| 30 | 762 | 46.0 | 1168 | 30 | 762 | 50.0 | 1270 | 30 | 762 | 44.0 | 1118 |
| 32 | 813 | 48.0 | 1219 | 32 | 813 | 52.0 | 1321 | 32 | 813 | 46.0 | 1168 |
| 34 | 864 | 50.0 | 1270 | 34 | 864 | 54.0 | 1372 | 34 | 864 | 48.0 | 1219 |
| 36 | 914 | 52.0 | 1321 | 36 | 914 | 56.0 | 1422 | 36 | 914 | 50.0 | 1270 |
| 38 | 965 | 54.0 | 1372 | 38 | 965 | 58.0 | 1473 | 38 | 965 | 52.0 | 1321 |
| 40 | 1016 | 56.0 | 1422 | 40 | 1016 | 60.0 | 1524 | 40 | 1016 | 54.0 | 1372 |
| 42 | 1067 | 58.0 | 1473 | 42 | 1067 | 62.0 | 1575 | 42 | 1067 | 56.0 | 1422 |
| 44 | 1118 | 60.0 | 1524 | 44 | 1118 | 64.0 | 1626 | 44 | 1118 | 58.0 | 1473 |
| 46 | 1168 | 62.0 | 1575 | 46 | 1168 | 66.0 | 1676 | 46 | 1168 | 60.0 | 1524 |
| 48 | 1219 | 64.0 | 1626 | 48 | 1219 | 68.0 | 1727 | 48 | 1219 | 62.0 | 1575 |

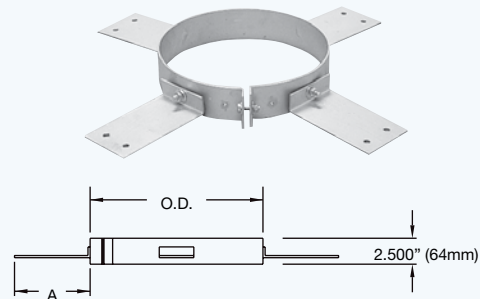
FLOOR GUIDE • FG

Used as a guide at floor penetrations. It is attached to the floor by means of four (4) angles. It keeps a minimum distance between the chimney and combustible floor materials.



ROOF SUPPORT • RS

Used to support and guide the portion of the chimney which extends to the roof. It is attached to the roof curb by means of four (4) angles. It keeps a minimum distance between the chimney and combustible materials at the roof.



| CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, CBIL1, CBIL1F | | Dim. A | |
|---------------------|--------------|----------|--------------|----------------------|--------------|--------|-----|
| I.D. | | I.D. | | I.D. | | Dim. A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 to 14 | 152 to 356 | 6 to 10 | 152 to 254 | 6 to 16 | 152 to 408 | 5.25 | 133 |
| 16 to 22 | 406 to 559 | 12 to 18 | 279 to 457 | 18 to 24 | 457 to 610 | 7.25 | 184 |
| 24 to 32 | 610 to 813 | 20 to 28 | 508 to 711 | 26 to 34 | 660 to 864 | 9.25 | 235 |
| 34 to 42 | 864 to 1067 | 30 to 38 | 762 to 965 | 36 to 44 | 914 to 1118 | 11.25 | 286 |
| 44 to 48 | 1118 to 1219 | 40 to 48 | 1016 to 1219 | 46 to 48 | 1168 to 1219 | 13.25 | 337 |

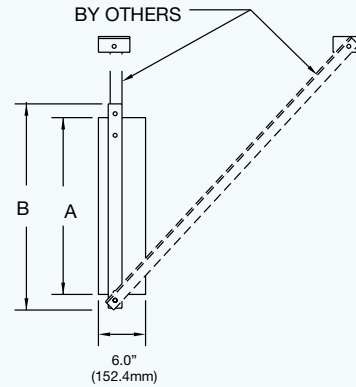
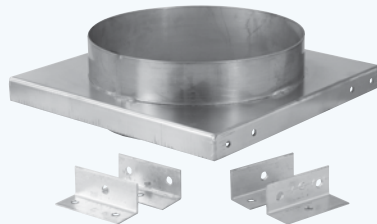
GUIDES

WALL GUIDE • WG

Used as a guide and to allow for expansion of the flue or chimney. It may be used either horizontally or vertically. The oblique braces (not included) may be attached above or below the guide plate.

Includes:

4 Wall brackets

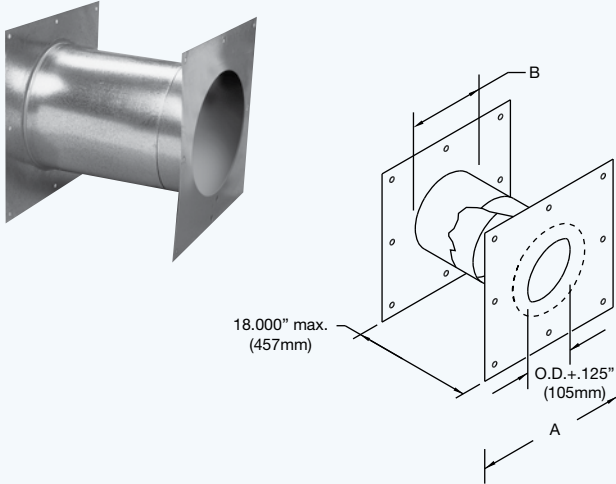


| I.D. | | CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|------|------|---------------------|------|----|------|--------|------|----|------|----------------------|------|----|------|
| | | A | | B | | A | | B | | A | | B | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 10.25 | 260 | 14 | 356 | 14.25 | 362 | 18 | 457 | 8.25 | 210 | 12 | 305 |
| 8 | 203 | 12.25 | 311 | 16 | 406 | 16.25 | 413 | 20 | 508 | 10.25 | 260 | 14 | 356 |
| 10 | 254 | 14.25 | 362 | 18 | 457 | 18.25 | 464 | 22 | 559 | 12.25 | 311 | 16 | 406 |
| 12 | 305 | 16.25 | 413 | 20 | 508 | 20.25 | 514 | 24 | 610 | 14.25 | 362 | 18 | 457 |
| 14 | 356 | 18.25 | 464 | 22 | 559 | 22.25 | 565 | 26 | 660 | 16.25 | 413 | 20 | 508 |
| 16 | 406 | 20.25 | 514 | 24 | 610 | 24.25 | 616 | 28 | 711 | 18.25 | 464 | 22 | 559 |
| 18 | 457 | 22.25 | 565 | 26 | 660 | 26.25 | 667 | 30 | 762 | 20.25 | 514 | 24 | 610 |
| 20 | 508 | 24.25 | 616 | 28 | 711 | 28.25 | 718 | 32 | 813 | 22.25 | 565 | 26 | 660 |
| 22 | 559 | 26.25 | 667 | 30 | 762 | 30.25 | 768 | 34 | 864 | 24.25 | 616 | 28 | 711 |
| 24 | 610 | 28.25 | 718 | 32 | 813 | 32.25 | 819 | 36 | 914 | 26.25 | 667 | 30 | 762 |
| 26 | 660 | 30.25 | 768 | 34 | 864 | 34.25 | 870 | 38 | 965 | 28.25 | 718 | 32 | 813 |
| 28 | 711 | 32.25 | 819 | 36 | 914 | 36.25 | 921 | 40 | 1016 | 30.25 | 768 | 34 | 864 |
| 30 | 762 | 34.25 | 870 | 38 | 965 | 38.25 | 972 | 42 | 1067 | 32.25 | 819 | 36 | 914 |
| 32 | 813 | 36.25 | 921 | 40 | 1016 | 40.25 | 1022 | 44 | 1118 | 34.25 | 870 | 38 | 965 |
| 34 | 864 | 38.25 | 972 | 42 | 1067 | 42.25 | 1073 | 46 | 1168 | 36.25 | 921 | 40 | 1016 |
| 36 | 914 | 40.25 | 1022 | 44 | 1118 | 44.25 | 1124 | 48 | 1219 | 38.25 | 972 | 42 | 1067 |
| 38 | 965 | 42.25 | 1073 | 46 | 1168 | 46.25 | 1175 | 50 | 1270 | 40.25 | 1022 | 44 | 1118 |
| 40 | 1016 | 44.25 | 1124 | 48 | 1219 | 48.25 | 1226 | 52 | 1321 | 42.25 | 1073 | 46 | 1168 |
| 42 | 1067 | 46.25 | 1175 | 50 | 1270 | 50.25 | 1276 | 54 | 1372 | 44.25 | 1124 | 48 | 1219 |
| 44 | 1118 | 48.25 | 1226 | 52 | 1321 | 52.25 | 1327 | 56 | 1422 | 46.25 | 1175 | 50 | 1270 |
| 46 | 1168 | 50.25 | 1276 | 54 | 1372 | 54.25 | 1378 | 58 | 1473 | 48.25 | 1226 | 52 | 1321 |
| 48 | 1219 | 52.25 | 1327 | 56 | 1422 | 56.25 | 1429 | 60 | 1524 | 50.25 | 1276 | 54 | 1372 |

FIRESTOPS AND GUIDES

WALL FIRESTOP • WFS

Used to keep a minimum clearance from combustible materials where the flue passes through a wall.

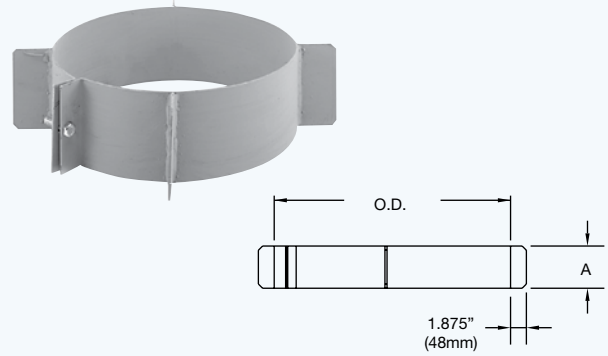


$$A = O.D + 2 * \text{Clearance} + 8$$

$$B = O.D + \text{Clearance}$$

GUIDING SPACER • GS

Used to guide the flue or the chimney against the inner wall of the sleeves it passes through. It holds the chimney at a distance of 2" (51mm) from the wall firestop (WFS), insulated wall firestop (IFS) or an insulated sleeve (IS).



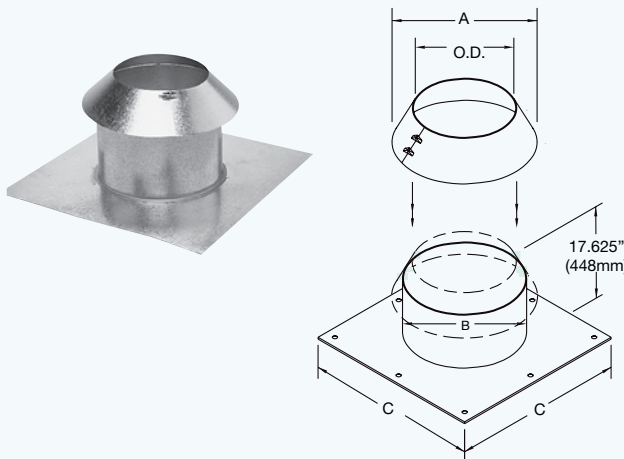
| CBILA, CBIL1, CBIL1F | | CBIL, CBIL2, CBIL2F | | CBIL4F | | A | |
|----------------------|--------------|---------------------|-------------|----------|-------------|----|-----|
| I.D. | | I.D. | | I.D. | | | |
| in | mm | in | mm | in | mm | in | mm |
| 6 to 18 | 152 to 457 | 6 to 16 | 152 to 406 | 6 to 12 | 152 to 305 | 4 | 102 |
| 20 to 38 | 508 to 965 | 18 to 36 | 457 to 914 | 14 to 32 | 356 to 813 | 6 | 152 |
| 40 to 48 | 1016 to 1219 | 38 to 48 | 965 to 1219 | 34 to 48 | 864 to 1219 | 8 | 203 |

RADIANT FIRESTOP • RFS

Used to protect combustible materials where a chimney passes through an attic. It ensures a minimum distance from combustible materials.

Includes:

1 Protecting collar



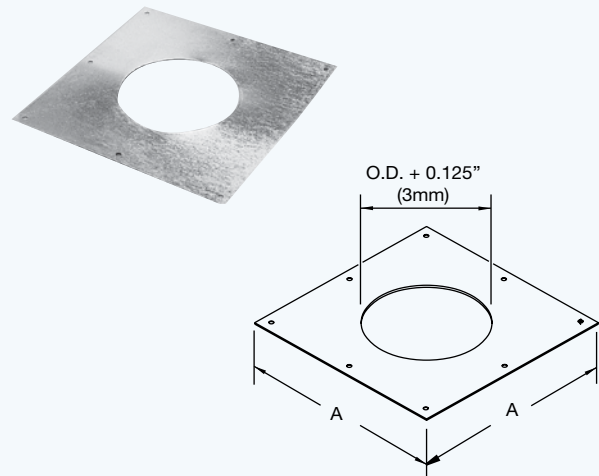
$$A = O.D + 2 * \text{Clearance} + 4$$

$$B = O.D + 2 * \text{Clearance}$$

$$C = O.D + 2 * \text{Clearance} + 12$$

FIRESTOP • FS

Used to keep space between any combustible material of a wall, floor or roof, where a flue or chimney penetrates.



$$A = O.D + 2 * \text{Clearance} + 8$$

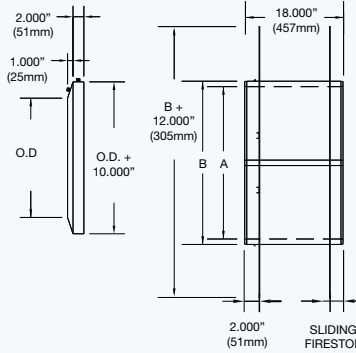
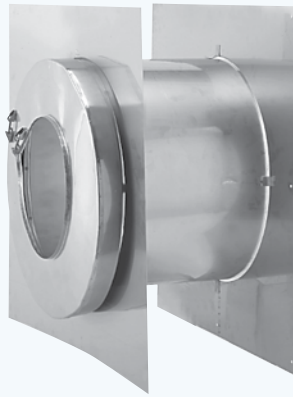
FIRESTOPS

INSULATED WALL FIRESTOP • IFS

Used to protect combustible materials where a flue or chimney passes through a wall. It ensures a minimum space of 2" (51mm) from combustible materials, in addition to reducing excessive heat by means of its double wall and 2" (51mm) high temperature insulation.

Includes:

- 1 Finishing collar
- 1 Firestop



| I.D. | | CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|------|------|---------------------|------|--------|------|--------|------|--------|------|----------------------|------|--------|------|
| | | Dim. A | | Dim. B | | Dim. A | | Dim. B | | Dim. A | | Dim. B | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 18 | 457 | 18 | 457 | 22 | 559 | 12 | 305 | 16 | 406 |
| 8 | 203 | 16 | 406 | 20 | 508 | 20 | 508 | 24 | 610 | 14 | 356 | 18 | 457 |
| 10 | 254 | 18 | 457 | 22 | 559 | 22 | 559 | 26 | 660 | 16 | 406 | 20 | 508 |
| 12 | 305 | 20 | 508 | 24 | 610 | 24 | 610 | 28 | 711 | 18 | 457 | 22 | 559 |
| 14 | 356 | 22 | 559 | 26 | 660 | 26 | 660 | 30 | 762 | 20 | 508 | 24 | 610 |
| 16 | 406 | 24 | 610 | 28 | 711 | 28 | 711 | 32 | 813 | 22 | 559 | 26 | 660 |
| 18 | 457 | 26 | 660 | 30 | 762 | 30 | 762 | 34 | 864 | 24 | 610 | 28 | 711 |
| 20 | 508 | 28 | 711 | 32 | 813 | 32 | 813 | 36 | 914 | 26 | 660 | 30 | 762 |
| 22 | 559 | 30 | 762 | 34 | 864 | 34 | 864 | 38 | 965 | 28 | 711 | 32 | 813 |
| 24 | 610 | 32 | 813 | 36 | 914 | 36 | 914 | 40 | 1016 | 30 | 762 | 34 | 864 |
| 26 | 660 | 34 | 864 | 38 | 965 | 38 | 965 | 42 | 1067 | 32 | 813 | 36 | 914 |
| 28 | 711 | 36 | 914 | 40 | 1016 | 40 | 1016 | 44 | 1118 | 34 | 864 | 38 | 965 |
| 30 | 762 | 38 | 965 | 42 | 1067 | 42 | 1067 | 46 | 1168 | 36 | 914 | 40 | 1016 |
| 32 | 813 | 40 | 1016 | 44 | 1118 | 44 | 1118 | 48 | 1219 | 38 | 965 | 42 | 1067 |
| 34 | 864 | 42 | 1067 | 46 | 1168 | 46 | 1168 | 50 | 1270 | 40 | 1016 | 44 | 1118 |
| 36 | 914 | 44 | 1118 | 48 | 1219 | 48 | 1219 | 52 | 1321 | 42 | 1067 | 46 | 1168 |
| 38 | 965 | 46 | 1168 | 50 | 1270 | 50 | 1270 | 54 | 1372 | 44 | 1118 | 48 | 1219 |
| 40 | 1016 | 48 | 1219 | 52 | 1321 | 52 | 1321 | 56 | 1422 | 46 | 1168 | 50 | 1270 |
| 42 | 1067 | 50 | 1270 | 54 | 1372 | 54 | 1372 | 58 | 1473 | 48 | 1219 | 52 | 1321 |
| 44 | 1118 | 52 | 1321 | 56 | 1422 | 56 | 1422 | 60 | 1524 | 50 | 1270 | 54 | 1372 |
| 46 | 1168 | 54 | 1372 | 58 | 1473 | 58 | 1473 | 62 | 1575 | 52 | 1321 | 56 | 1422 |
| 48 | 1219 | 56 | 1422 | 60 | 1524 | 60 | 1524 | 64 | 1626 | 54 | 1372 | 58 | 1473 |

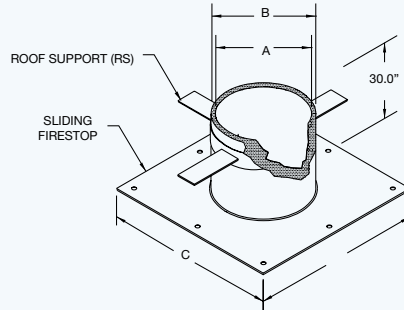
FIRESTOPS

INSULATED SLEEVE • IS

Used to protect combustible materials where a flue or chimney passes through a wall or floor. It ensures a minimum space of 2" (51mm) from combustible materials, in addition to reducing excessive heat by means of its double wall and 2" (51mm) high temperature insulation.

Includes:

- 1 Firestops
- 1 Roof Support

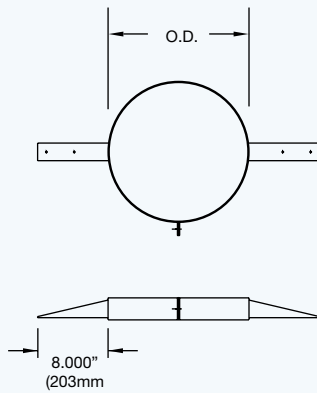


| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|------|--------|------|--------|------|--------|------|--------|------|--------|------|----------------------|------|--------|------|--------|------|
| | | Dim. A | | Dim. B | | Dim. C | | Dim. A | | Dim. B | | Dim. C | | Dim. A | | Dim. B | | Dim. C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 18 | 457 | 30 | 762 | 18 | 457 | 22 | 559 | 34 | 864 | 12 | 305 | 16 | 406 | 28 | 711 |
| 8 | 203 | 16 | 406 | 20 | 508 | 32 | 813 | 20 | 508 | 24 | 610 | 36 | 914 | 14 | 356 | 18 | 457 | 30 | 762 |
| 10 | 254 | 18 | 457 | 22 | 559 | 34 | 864 | 22 | 559 | 26 | 660 | 38 | 965 | 16 | 406 | 20 | 508 | 32 | 813 |
| 12 | 305 | 20 | 508 | 24 | 610 | 36 | 914 | 24 | 610 | 28 | 711 | 40 | 1016 | 18 | 457 | 22 | 559 | 34 | 864 |
| 14 | 356 | 22 | 559 | 26 | 660 | 38 | 965 | 26 | 660 | 30 | 762 | 42 | 1067 | 20 | 508 | 24 | 610 | 36 | 914 |
| 16 | 406 | 24 | 610 | 28 | 711 | 40 | 1016 | 28 | 711 | 32 | 813 | 44 | 1118 | 22 | 559 | 26 | 660 | 38 | 965 |
| 18 | 457 | 26 | 660 | 30 | 762 | 42 | 1067 | 30 | 762 | 34 | 864 | 46 | 1168 | 24 | 610 | 28 | 711 | 40 | 1016 |
| 20 | 508 | 28 | 711 | 32 | 813 | 44 | 1118 | 32 | 813 | 36 | 914 | 48 | 1219 | 26 | 660 | 30 | 762 | 42 | 1067 |
| 22 | 559 | 30 | 762 | 34 | 864 | 46 | 1168 | 34 | 864 | 38 | 965 | 50 | 1270 | 28 | 711 | 32 | 813 | 44 | 1118 |
| 24 | 610 | 32 | 813 | 36 | 914 | 48 | 1219 | 36 | 914 | 40 | 1016 | 52 | 1321 | 30 | 762 | 34 | 864 | 46 | 1168 |
| 26 | 660 | 34 | 864 | 38 | 965 | 50 | 1270 | 38 | 965 | 42 | 1067 | 54 | 1372 | 32 | 813 | 36 | 914 | 48 | 1219 |
| 28 | 711 | 36 | 914 | 40 | 1016 | 52 | 1321 | 40 | 1016 | 44 | 1118 | 56 | 1422 | 34 | 864 | 38 | 965 | 50 | 1270 |
| 30 | 762 | 38 | 965 | 42 | 1067 | 54 | 1372 | 42 | 1067 | 46 | 1168 | 58 | 1473 | 36 | 914 | 40 | 1016 | 52 | 1321 |
| 32 | 813 | 40 | 1016 | 44 | 1118 | 56 | 1422 | 44 | 1118 | 48 | 1219 | 60 | 1524 | 38 | 965 | 42 | 1067 | 54 | 1372 |
| 34 | 864 | 42 | 1067 | 46 | 1168 | 58 | 1473 | 46 | 1168 | 50 | 1270 | 62 | 1575 | 40 | 1016 | 44 | 1118 | 56 | 1422 |
| 36 | 914 | 44 | 1118 | 48 | 1219 | 60 | 1524 | 48 | 1219 | 52 | 1321 | 64 | 1626 | 42 | 1067 | 46 | 1168 | 58 | 1473 |
| 38 | 965 | 46 | 1168 | 50 | 1270 | 62 | 1575 | 50 | 1270 | 54 | 1372 | 66 | 1676 | 44 | 1118 | 48 | 1219 | 60 | 1524 |
| 40 | 1016 | 48 | 1219 | 52 | 1321 | 64 | 1626 | 52 | 1321 | 56 | 1422 | 68 | 1727 | 46 | 1168 | 50 | 1270 | 62 | 1575 |
| 42 | 1067 | 50 | 1270 | 54 | 1372 | 66 | 1676 | 54 | 1372 | 58 | 1473 | 70 | 1778 | 48 | 1219 | 52 | 1321 | 64 | 1626 |
| 44 | 1118 | 52 | 1321 | 56 | 1422 | 68 | 1727 | 56 | 1422 | 60 | 1524 | 72 | 1829 | 50 | 1270 | 54 | 1372 | 66 | 1676 |
| 46 | 1168 | 54 | 1372 | 58 | 1473 | 70 | 1778 | 58 | 1473 | 62 | 1575 | 74 | 1880 | 52 | 1321 | 56 | 1422 | 68 | 1727 |
| 48 | 1219 | 56 | 1422 | 60 | 1524 | 72 | 1829 | 60 | 1524 | 64 | 1626 | 76 | 1930 | 54 | 1372 | 58 | 1473 | 70 | 1778 |

BANDS

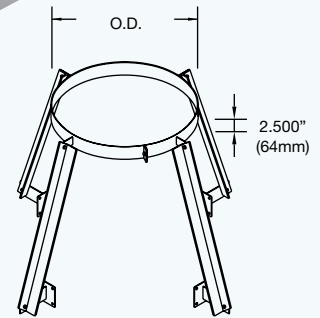
SUSPENSION BAND • SB

Used to stabilize and support a flue or chimney in vertical runs. It avoids the transfer of the flue weight to the appliance. To be used with threaded rods (not included)



ROOF BAND • RB

Used to stabilize a chimney laterally where it extends more than 10'-0" (3048mm) above the roof or for locations exposed to strong winds. It is attached to the chimney and the roof curb and does not require anchoring to the roof.

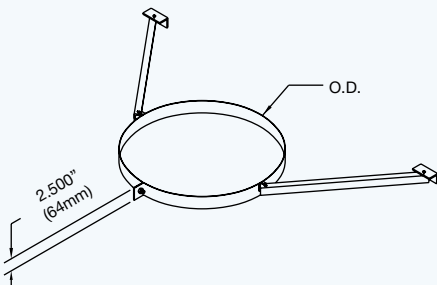
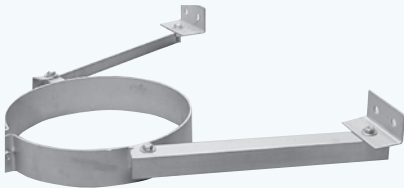


WALL BAND • WB

Used to stabilize the chimney along a vertical wall. The maximum recommended spacing between wall bands is 10'-0" (3048mm).

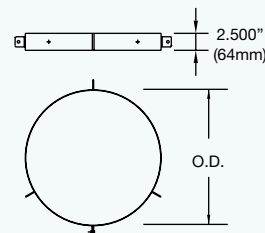
Includes:

- 1 Wall brackets
- 1 Stabilizing angles



GUY WIRE BAND • GWB

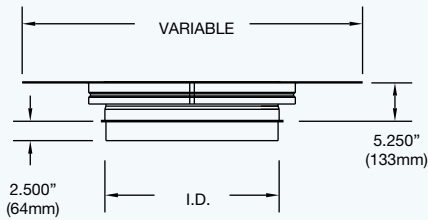
Used to stabilize a chimney laterally where it extends more than 10'-0" (3048mm) above the roof or for locations exposed to strong winds. It is attached to the chimney and is designed to receive 3 guy wires 120° apart (not included). It may be manufactured to receive 4 guy wires 90° apart.



BAND, COLLARS AND FLASHING

FAN ADAPTER • FA

Installed at the chimney termination. Used to connect the chimney to an induced draft fan.

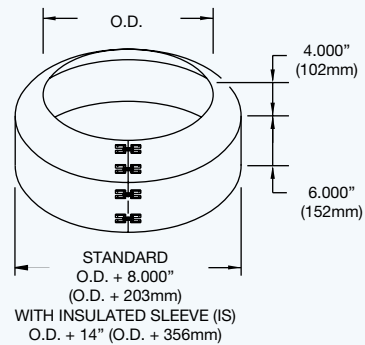


VENTILATED COLLAR • VC • SVC

Used to seal the space between the chimney and flashing. The ventilated collar must be sealed to the chimney with appropriate sealant. It is supplied with ventilated flashing.

Includes:

1 Socket head cap screws

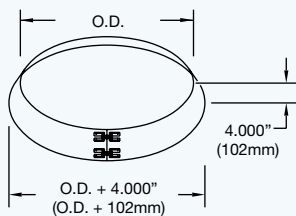


STORM COLLAR • SC

Used to seal the space between the chimney and flashing. The storm collar must be sealed to the chimney with appropriate sealant. It is supplied with flashing for flat roofs of adjustable flashing.

Includes:

1 Socket head cap screws

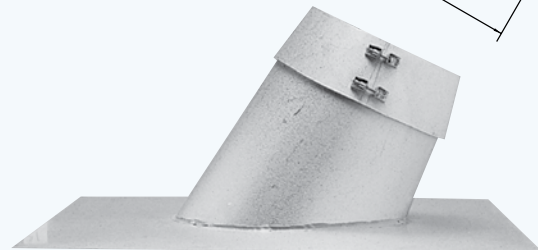
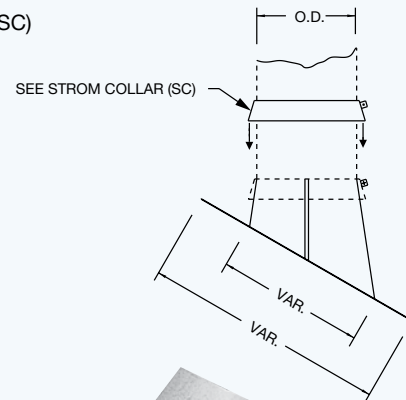


ADJUSTABLE FLASHING • AF

Used to seal the space between the chimney and the roof. Specify the roof slope when ordering.

Includes:

1 Storm collar (SC)



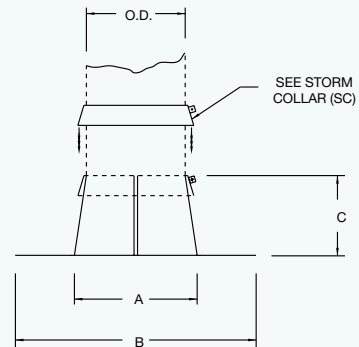
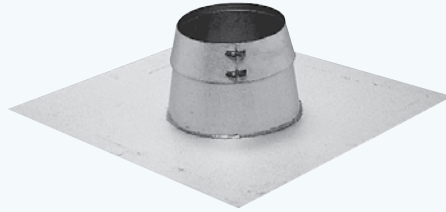
FLASHINGS

FLAT FLASHING • F

Used to seal the space between the chimney and the roof.

Includes:

- 1 Storm collar (SC)



| All Products | | | |
|--------------------------------|---------|-----|-----|
| $B = O.D + 2 * Clearance + 16$ | | | |
| C | I.D. | in | mm |
| | 6 to 16 | 12 | 305 |
| 18 to 48 | 16 | 406 | |

| I.D. | | CBIL, CBIL2, CBIL2F | | CBIL4F | | CBILA, 1, 1F | |
|------|------|---------------------|------|--------|------|--------------|------|
| | | A | | A | | A | |
| in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 18 | 457 | 12 | 305 |
| 8 | 203 | 16 | 406 | 20 | 508 | 14 | 356 |
| 10 | 254 | 18 | 457 | 22 | 559 | 16 | 406 |
| 12 | 305 | 20 | 508 | 24 | 610 | 18 | 457 |
| 14 | 356 | 22 | 559 | 26 | 660 | 20 | 508 |
| 16 | 406 | 24 | 610 | 28 | 711 | 22 | 559 |
| 18 | 457 | 26 | 660 | 30 | 762 | 24 | 610 |
| 20 | 508 | 28 | 711 | 32 | 813 | 26 | 660 |
| 22 | 559 | 30 | 762 | 34 | 864 | 28 | 711 |
| 24 | 610 | 32 | 813 | 36 | 914 | 30 | 762 |
| 26 | 660 | 34 | 864 | 38 | 965 | 32 | 813 |
| 28 | 711 | 36 | 914 | 40 | 1016 | 34 | 864 |
| 30 | 762 | 38 | 965 | 42 | 1067 | 36 | 914 |
| 32 | 813 | 40 | 1016 | 44 | 1118 | 38 | 965 |
| 34 | 864 | 42 | 1067 | 46 | 1168 | 40 | 1016 |
| 36 | 914 | 44 | 1118 | 48 | 1219 | 42 | 1067 |
| 38 | 965 | 46 | 1168 | 50 | 1270 | 44 | 1118 |
| 40 | 1016 | 48 | 1219 | 52 | 1321 | 46 | 1168 |
| 42 | 1067 | 50 | 1270 | 54 | 1372 | 48 | 1219 |
| 44 | 1118 | 52 | 1321 | 56 | 1422 | 50 | 1270 |
| 46 | 1168 | 54 | 1372 | 58 | 1473 | 52 | 1321 |
| 48 | 1219 | 56 | 1422 | 60 | 1524 | 54 | 1372 |

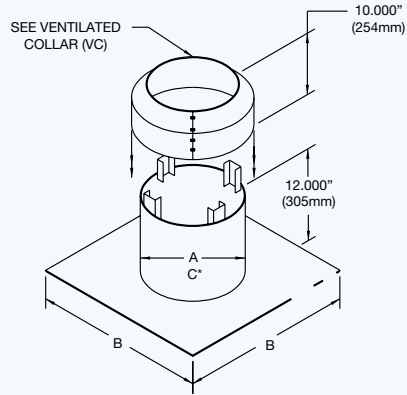
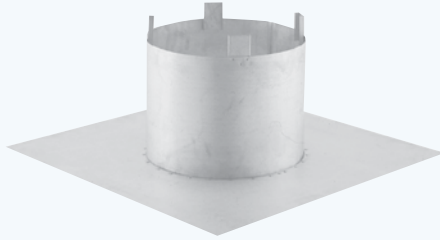
FLASHINGS

VENTILATED FLASHING • VF

Used to seal and ventilate the space between the chimney and the roof. It reduces the temperature around the roof opening and it prevents excessive accumulation of heat near combustible materials. If an insulated sleeve is used, a sleeve ventilated flashing (SVF) was to be used.

Includes:

- 1 Ventilated collar (VC)



| |
|-----------------------------------|
| All Products |
| B = O.D + 2*Clearance + 16 |

| I.D. | | CBIL, CBIL2, CBIL2F | | | | CBIL4F | | | | CBILA, CBIL1, CBIL1F | | | |
|------|------|---------------------|------|--------|------|--------|------|--------|------|----------------------|------|--------|------|
| | | Dim. A | | Dim. C | | Dim. A | | Dim. C | | Dim. A | | Dim. C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 14 | 356 | 20 | 508 | 18 | 457 | 24 | 610 | 12 | 305 | 18 | 457 |
| 8 | 203 | 16 | 406 | 22 | 559 | 20 | 508 | 26 | 660 | 14 | 356 | 20 | 508 |
| 10 | 254 | 18 | 457 | 24 | 610 | 22 | 559 | 28 | 711 | 16 | 406 | 22 | 559 |
| 12 | 305 | 20 | 508 | 26 | 660 | 24 | 610 | 30 | 762 | 18 | 457 | 24 | 610 |
| 14 | 356 | 22 | 559 | 28 | 711 | 26 | 660 | 32 | 813 | 20 | 508 | 26 | 660 |
| 16 | 406 | 24 | 610 | 30 | 762 | 28 | 711 | 34 | 864 | 22 | 559 | 28 | 711 |
| 18 | 457 | 26 | 660 | 32 | 813 | 30 | 762 | 36 | 914 | 24 | 610 | 30 | 762 |
| 20 | 508 | 28 | 711 | 34 | 864 | 32 | 813 | 38 | 965 | 26 | 660 | 32 | 813 |
| 22 | 559 | 30 | 762 | 36 | 914 | 34 | 864 | 40 | 1016 | 28 | 711 | 34 | 864 |
| 24 | 610 | 32 | 813 | 38 | 965 | 36 | 914 | 42 | 1067 | 30 | 762 | 36 | 914 |
| 26 | 660 | 34 | 864 | 40 | 1016 | 38 | 965 | 44 | 1118 | 32 | 813 | 38 | 965 |
| 28 | 711 | 36 | 914 | 42 | 1067 | 40 | 1016 | 46 | 1168 | 34 | 864 | 40 | 1016 |
| 30 | 762 | 38 | 965 | 44 | 1118 | 42 | 1067 | 48 | 1219 | 36 | 914 | 42 | 1067 |
| 32 | 813 | 40 | 1016 | 46 | 1168 | 44 | 1118 | 50 | 1270 | 38 | 965 | 44 | 1118 |
| 34 | 864 | 42 | 1067 | 48 | 1219 | 46 | 1168 | 52 | 1321 | 40 | 1016 | 46 | 1168 |
| 36 | 914 | 44 | 1118 | 50 | 1270 | 48 | 1219 | 54 | 1372 | 42 | 1067 | 48 | 1219 |
| 38 | 965 | 46 | 1168 | 52 | 1321 | 50 | 1270 | 56 | 1422 | 44 | 1118 | 50 | 1270 |
| 40 | 1016 | 48 | 1219 | 54 | 1372 | 52 | 1321 | 58 | 1473 | 46 | 1168 | 52 | 1321 |
| 42 | 1067 | 50 | 1270 | 56 | 1422 | 54 | 1372 | 60 | 1524 | 48 | 1219 | 54 | 1372 |
| 44 | 1118 | 52 | 1321 | 58 | 1473 | 56 | 1422 | 62 | 1575 | 50 | 1270 | 56 | 1422 |
| 46 | 1168 | 54 | 1372 | 60 | 1524 | 58 | 1473 | 64 | 1626 | 52 | 1321 | 58 | 1473 |
| 48 | 1219 | 56 | 1422 | 62 | 1575 | 60 | 1524 | 66 | 1676 | 54 | 1372 | 60 | 1524 |

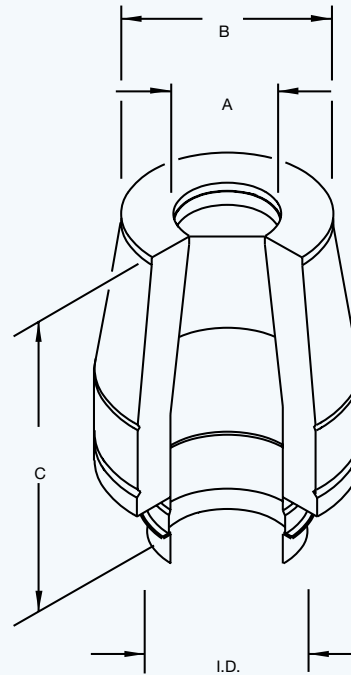
* with insulated sleeve (15)

TERMINATIONS

EXHAUST CONE • EC

Installed at the top of the chimney. It improves the draft and increases the speed of exhaust gases by 50%. Installation of a drain-tee cap (DC) or a drain section (DS) at the base of the chimney is required for use of an exhaust cone.

K = 1.25



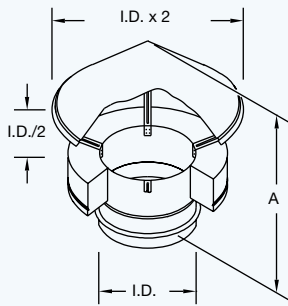
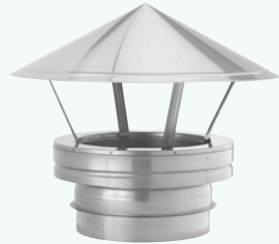
| I.D. | | CBIL, CBIL2, CBIL2F | | | | | | CBIL4F | | | | | | CBILA, CBIL1, CBIL1F | | | | | |
|------|------|---------------------|------|----|------|-------|------|--------|------|----|------|-------|------|----------------------|------|----|------|-------|------|
| | | A | | B | | C | | A | | B | | C | | A | | B | | C | |
| in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 6 | 152 | 5 | 127 | 9 | 229 | 17.25 | 438 | 5 | 127 | 13 | 330 | 17.25 | 438 | 5 | 127 | 7 | 178 | 17.25 | 438 |
| 8 | 203 | 7 | 178 | 11 | 279 | 17.25 | 438 | 7 | 178 | 15 | 381 | 17.25 | 438 | 7 | 178 | 9 | 229 | 17.25 | 438 |
| 10 | 254 | 8 | 203 | 12 | 305 | 17.25 | 438 | 8 | 203 | 16 | 406 | 17.25 | 438 | 8 | 203 | 10 | 254 | 17.25 | 438 |
| 12 | 305 | 10 | 254 | 14 | 356 | 17.25 | 438 | 10 | 254 | 18 | 457 | 17.25 | 438 | 10 | 254 | 12 | 305 | 17.25 | 438 |
| 14 | 356 | 12 | 305 | 16 | 406 | 23.25 | 591 | 12 | 305 | 20 | 508 | 23.25 | 591 | 12 | 305 | 14 | 356 | 23.25 | 591 |
| 16 | 406 | 14 | 356 | 18 | 457 | 23.25 | 591 | 14 | 356 | 22 | 559 | 23.25 | 591 | 14 | 356 | 16 | 406 | 23.25 | 591 |
| 18 | 457 | 16 | 406 | 20 | 508 | 23.25 | 591 | 16 | 406 | 24 | 610 | 23.25 | 591 | 16 | 406 | 18 | 457 | 23.25 | 591 |
| 20 | 508 | 16 | 406 | 20 | 508 | 23.25 | 591 | 16 | 406 | 24 | 610 | 23.25 | 591 | 16 | 406 | 18 | 457 | 23.25 | 591 |
| 22 | 559 | 18 | 457 | 22 | 559 | 23.25 | 591 | 18 | 457 | 26 | 660 | 23.25 | 591 | 18 | 457 | 20 | 508 | 23.25 | 591 |
| 24 | 610 | 20 | 508 | 24 | 610 | 23.25 | 591 | 20 | 508 | 28 | 711 | 23.25 | 591 | 20 | 508 | 22 | 559 | 23.25 | 591 |
| 26 | 660 | 22 | 559 | 26 | 660 | 29.25 | 743 | 22 | 559 | 30 | 762 | 29.25 | 743 | 22 | 559 | 24 | 610 | 29.25 | 743 |
| 28 | 711 | 24 | 610 | 28 | 711 | 29.25 | 743 | 24 | 610 | 32 | 813 | 29.25 | 743 | 24 | 610 | 26 | 660 | 29.25 | 743 |
| 30 | 762 | 24 | 610 | 28 | 711 | 29.25 | 743 | 24 | 610 | 32 | 813 | 29.25 | 743 | 24 | 610 | 26 | 660 | 29.25 | 743 |
| 32 | 813 | 26 | 660 | 30 | 762 | 35.25 | 895 | 26 | 660 | 34 | 864 | 35.25 | 895 | 26 | 660 | 28 | 711 | 35.25 | 895 |
| 34 | 864 | 28 | 711 | 32 | 813 | 35.25 | 895 | 28 | 711 | 36 | 914 | 35.25 | 895 | 28 | 711 | 30 | 762 | 35.25 | 895 |
| 36 | 914 | 30 | 762 | 34 | 864 | 35.25 | 895 | 30 | 762 | 38 | 965 | 35.25 | 895 | 30 | 762 | 32 | 813 | 35.25 | 895 |
| 38 | 965 | 30 | 762 | 34 | 864 | 41.25 | 1048 | 30 | 762 | 38 | 965 | 41.25 | 1048 | 30 | 762 | 32 | 813 | 41.25 | 1048 |
| 40 | 1016 | 32 | 813 | 36 | 914 | 41.25 | 1048 | 32 | 813 | 40 | 1016 | 41.25 | 1048 | 32 | 813 | 34 | 864 | 41.25 | 1048 |
| 42 | 1067 | 34 | 864 | 38 | 965 | 41.25 | 1048 | 34 | 864 | 42 | 1067 | 41.25 | 1048 | 34 | 864 | 36 | 914 | 41.25 | 1048 |
| 44 | 1118 | 36 | 914 | 40 | 1016 | 41.25 | 1048 | 36 | 914 | 44 | 1118 | 41.25 | 1048 | 36 | 914 | 38 | 965 | 41.25 | 1048 |
| 46 | 1168 | 38 | 965 | 42 | 1067 | 41.25 | 1048 | 38 | 965 | 46 | 1168 | 41.25 | 1048 | 38 | 965 | 40 | 1016 | 41.25 | 1048 |
| 48 | 1219 | 40 | 1016 | 44 | 1118 | 41.25 | 1048 | 40 | 1016 | 48 | 1219 | 41.25 | 1048 | 40 | 1016 | 42 | 1067 | 41.25 | 1048 |

TERMINATIONS

RAIN CAP • RC

Installed at the top of the chimney. It prevents entry of rain.

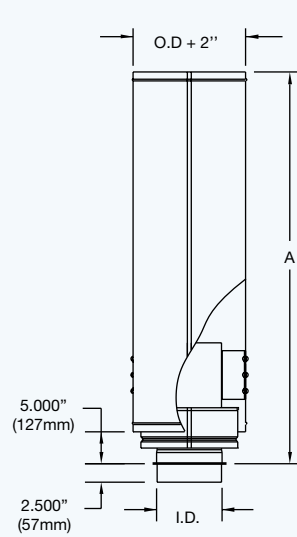
K = 0.5



| CBIL • CBIL2 CBIL2F • CBIL4F | | | |
|---------------------------------|-----|--------|-----|
| I.D. | | A | |
| in | mm | in | mm |
| 6 | 152 | 12.500 | 318 |
| 8 | 203 | 13.500 | 343 |
| 10 | 254 | 15.500 | 394 |
| 12 | 305 | 17.500 | 445 |
| 14 | 356 | 19.500 | 495 |
| 16 | 406 | 21.500 | 546 |
| 18 | 457 | 23.500 | 597 |
| 20 | 508 | 25.500 | 648 |
| 22 | 559 | 27.500 | 699 |
| 24 | 610 | 29.500 | 749 |

RAINSHIELD • RSH

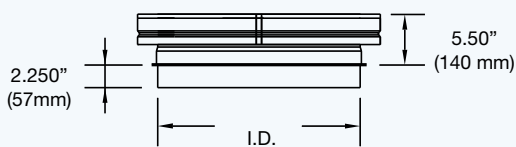
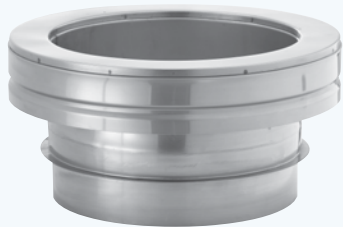
Installed at the top of the chimney. It prevents rain penetration when the chimney is installed at a location subject to high wind conditions. Installation of a drain-tee cap (DC) or drain section (DS) at the base of the chimney is required for use of a rainshield. Available from 6" (152mm) to 16" (406mm) diameter.



| I.D. | A |
|------|--------|
| in | in |
| 6 | 43.500 |
| 8 | 49.500 |
| 10 | 55.500 |
| 12 | 61.500 |
| 14 | 67.500 |
| 16 | 74.500 |

| I.D. | A |
|------|------|
| mm | mm |
| 152 | 1105 |
| 203 | 1257 |
| 254 | 1410 |
| 305 | 1592 |
| 356 | 1715 |
| 406 | 1892 |

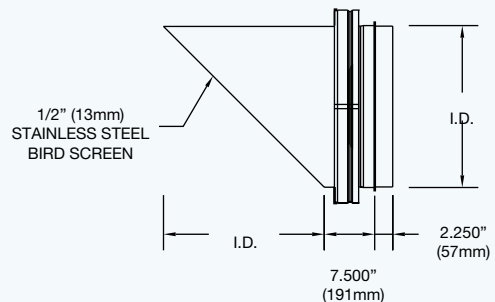
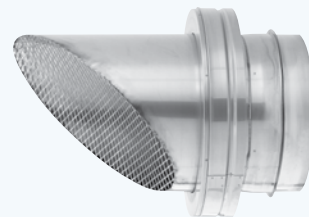
CLOSURE SECTION • CS



MITER SECTION • MS

Installed at the end of the chimney in horizontal exhaust applications. To be used with engine exhaust. Diameter range from 6" (152mm) to 16" (406mm). Material thickness is the same as the chimney section it is used with.

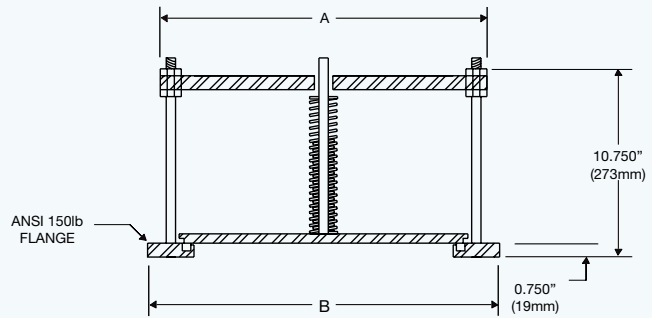
K = 1.25



ACCESSORY

RELIEF VALVE • RV

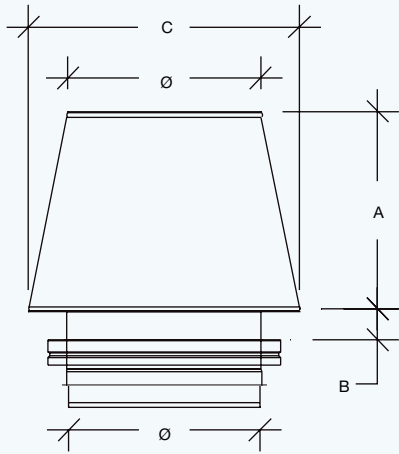
Relief valves are for utilization in reciprocating engine exhaust systems to minimize damage caused by engine backfire. They are commonly used to protect exhaust systems where factory-insulated engine exhaust silencers, catalytic converters and/or waste heat recovery units are used. Relief valves are set to open at exhaust pressure exceeding approximately one (1) PSIG (27.7" of water column). An optional additional tension spring is available to increase opening pressure to approximately 48.5" W.C. or greater. Relief valves are recommended in accordance with NFPA 37.



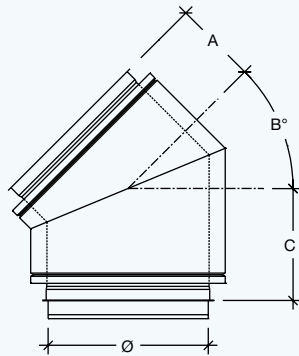
| I.D. | | A | | B | | # of springs |
|------|-----|--------|-----|--------|-----|--------------|
| in | mm | in | mm | in | mm | |
| 6 | 152 | 9.625 | 244 | 11.000 | 279 | 1 |
| 8 | 203 | 12.250 | 311 | 13.500 | 343 | 1 |
| 10 | 254 | 14.000 | 356 | 16.000 | 406 | 1 |
| 12 | 305 | 16.750 | 425 | 19.000 | 483 | 2 |
| 14 | 356 | 18.250 | 464 | 21.000 | 533 | 2 |
| 16 | 406 | 20.250 | 514 | 23.500 | 597 | 3 |
| 18 | 457 | 22.250 | 565 | 25.000 | 635 | 3 |
| 20 | 508 | 24.250 | 616 | 27.500 | 699 | 4 |
| 22 | 559 | 26.250 | 667 | 29.000 | 737 | 4 |
| 24 | 610 | 28.500 | 724 | 32.000 | 813 | 4 |

SPECIAL PARTS

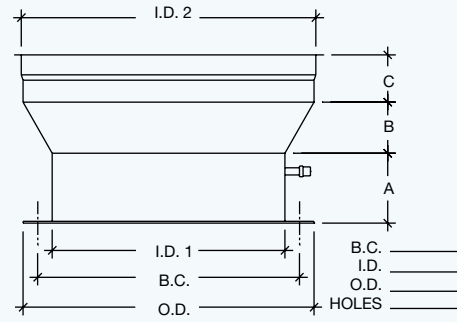
Several special parts are available upon request.
See some examples below.



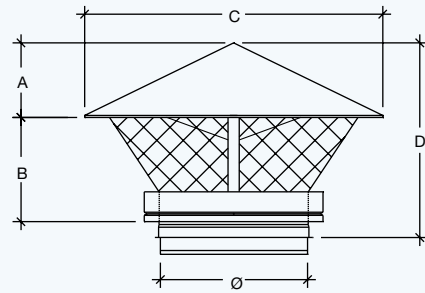
Finishing Cone



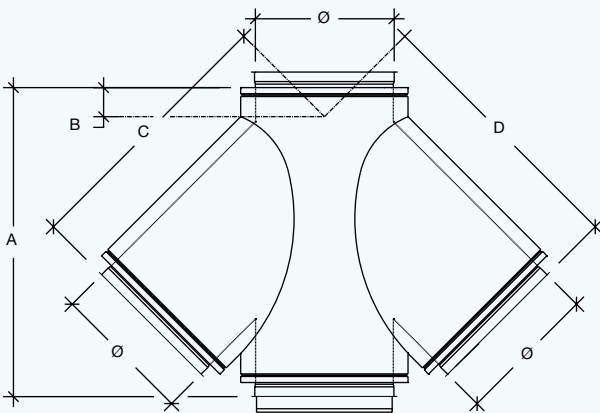
Special Elbow



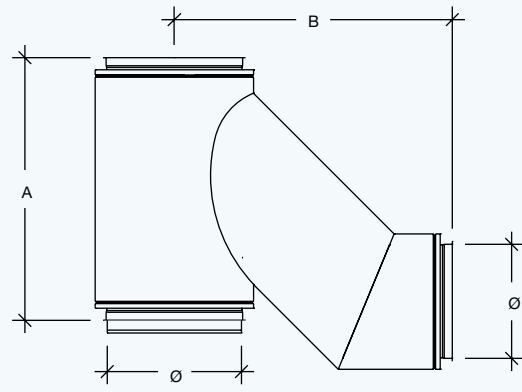
Special Starting Adapter



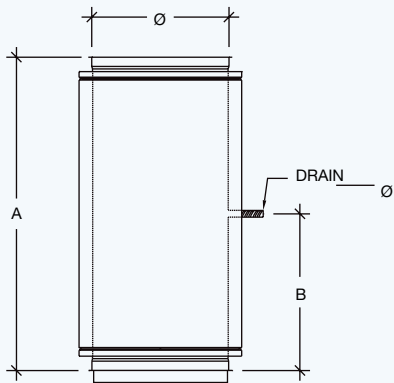
Special Rain Cap with Bird Screen



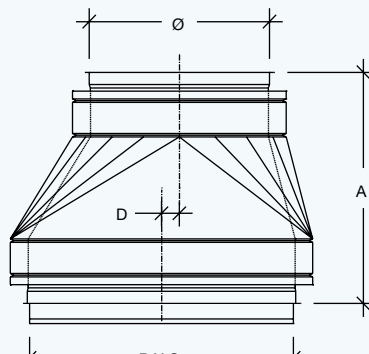
Double 45° Tee



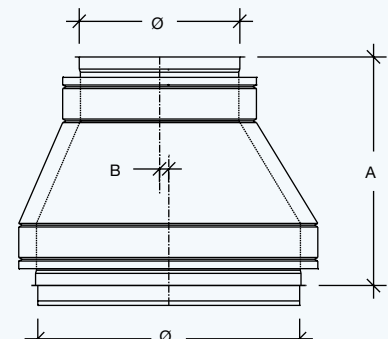
Combination Tee and Elbow



Test and Monitoring Port at any location



Rectangular to Round Transition



Eccentric Round to Round Transition

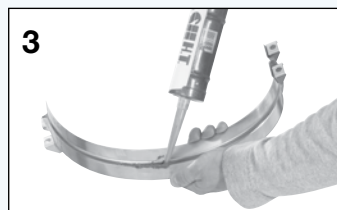
INSTALLATION GUIDE

Guide to Component Parts

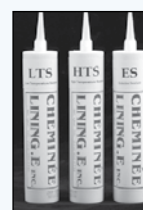
| MATERIALS | CODE | PAGE |
|-------------------------------|---------|------|
| ADJUSTMENT / EXPANSION | | |
| Adjustable Length | AL | 10 |
| Expansion Joint | EJ | 10 |
| Increaser | I | 19 |
| Reducer | R | 19 |
| Variable Length | VL | 10 |
| COMPONENT | | |
| Drain Section | DS | 10 |
| Drain -Tee Cap | DC | 20 |
| Tee Cap | TC | 20 |
| CONNECTING THE FLUE | | |
| Drain Starting Adapter | SAD | 21 |
| Starting Adapter | SA | 21 |
| Starting Sleeve | SS | 21 |
| CONNECTION / OFFSET | | |
| 5° Elbow | E5 | 14 |
| 15° Elbow | E15 | 15 |
| 30° Elbow | E30 | 16 |
| 45° Elbow | E45 | 17 |
| 90° Elbow | 2 x E45 | 18 |
| 90° Short Radius Elbow | E90 | 18 |
| 45° Tee | T45 | 12 |
| 90° Tee | T90 | 13 |
| FIRE PROTECTION | | |
| Firestop | FS | 26 |
| Insulated Sleeve | IS | 28 |
| Insulated Wall Firestop | IFS | 27 |
| Radiant Firestop | RFS | 26 |
| Wall Firestop | WFS | 26 |
| JOINTING | | |
| Assembly Band | AB | 20 |
| Finishing Band | FB | 20 |

| MATERIALS | CODE | PAGE |
|------------------------|------|------|
| LENGTH | | |
| 12" Length | 12L | 9 |
| 24" Length | 24L | 9 |
| 36" Length | 36L | 9 |
| 48" Length | 48L | 9 |
| RELIEF VALVE | | |
| | RV | 35 |
| SEALING AT ROOF | | |
| Adjustable Flashing | AF | 30 |
| Flashing for Flat Roof | F | 31 |
| Ventilated Flashing | VF | 32 |
| SIDE STABILITY | | |
| Guy Wire Band | GWB | 29 |
| Roof Band | RB | 29 |
| Wall Band | WB | 29 |
| SUPPORT / GUIDE | | |
| Anchor Plate | AP | 24 |
| Floor Guide | FG | 24 |
| Guiding Spacer | GS | 26 |
| Hanger Bracket | HB | 21 |
| Horizontal Support | HS | 23 |
| Roof Support | RS | 24 |
| Suspension Band | SB | 29 |
| Wall Guide | WG | 25 |
| Wall Support | WS | 22 |
| TERMINATIONS | | |
| Closure Section | CS | 34 |
| Exhaust Cone | EC | 33 |
| Fan Adapter | FA | 30 |
| Miter Section | MS | 34 |
| Rain Cap | RC | 34 |
| Rainshield | RSH | 34 |

PIPE AND FITTING JOINT ASSEMBLY, STEP BY STEP



1. All components have a male and a female end. The orientation is indicated on the labelling of each section with an arrow. The arrow indicates the direction of the flue gas flow.
2. Before fitting the large and small ends into one another, a sealant (LTS or HTS) is applied on the male end, at the gap between the inner flange and the inner pipe.
3. Assemble both sections by sliding one section into the other until the flanges meet. A layer of sealant is applied inside the V-Groove of the Assembly band (AB) prior to its installation over the joint.
4. The Assembly Band (AB) is installed and clamped in place with 4 nuts and bolts (supplied).
5. Insert the insulation strip around the inner joint assembly of insulated models CBIL2, CBIL2F, CBIL4F, CBIL1, CBIL1F.
6. The Finishing Band (FB) is installed by slipping the edges of the band into the outer pipe edges and clamping them with 3 nuts and bolts (supplied).



LTS: Low Temperature Sealant.
600°F maximum flue gas temperature

HTS: High Temperature Sealant.
Up to 2000°F flue gas temperature

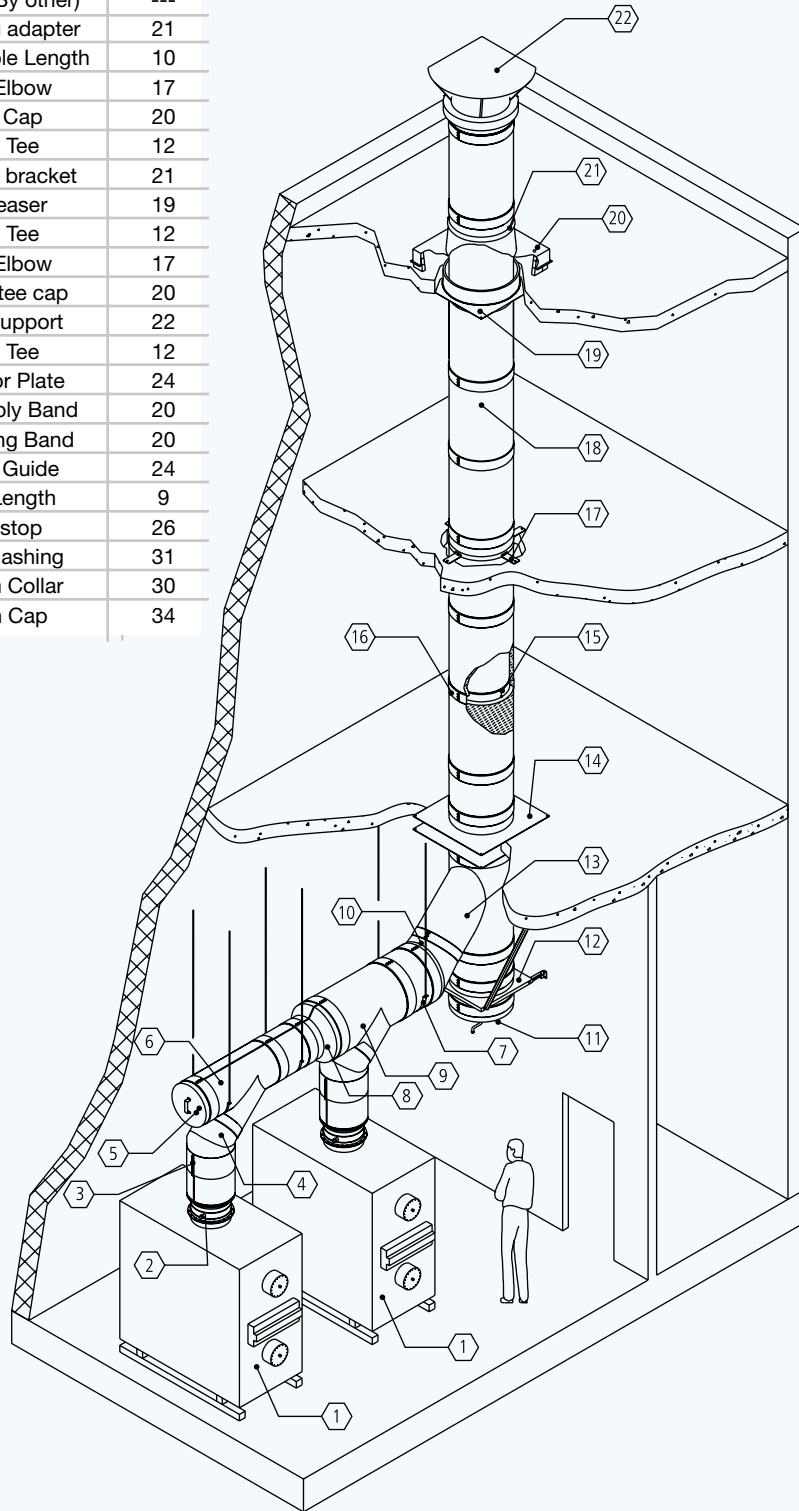
ES: Exterior Sealant.
Outer sealant weather proof

7. FOR OUTDOOR INSTALLATION AND BAD WEATHER PROTECTION, AN EXTERIOR SEALANT (ES) IS APPLIED AT THE JOINT BETWEEN THE FINISHING BAND (FB) AND THE OUTER WALL OF THE CHIMNEY.

SAMPLE DRAWINGS

Boiler Exhaust

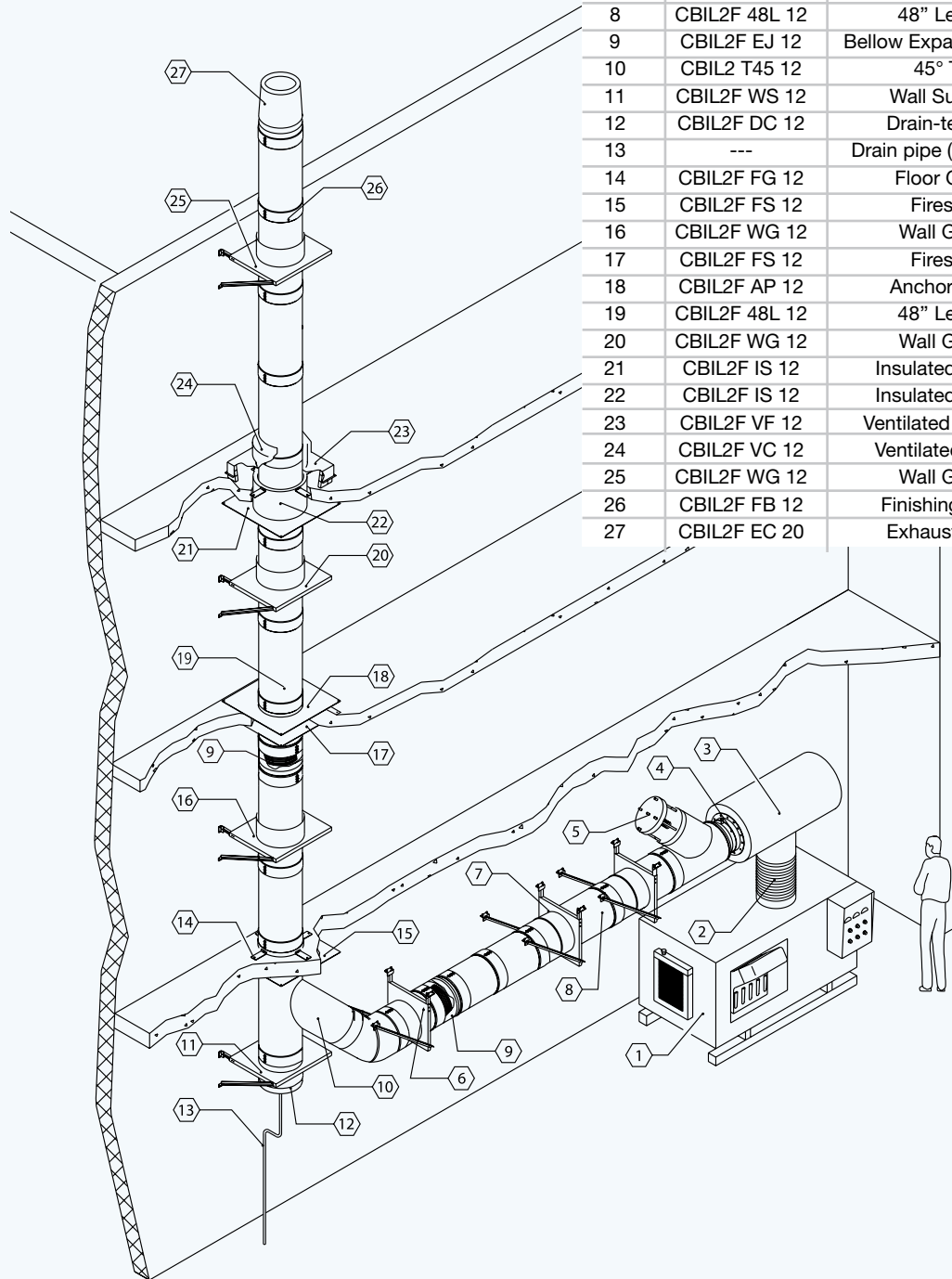
| No. | Part No. | Description | Page |
|-----|--------------|-------------------|------|
| 1 | --- | Boiler (By other) | --- |
| 2 | CBILA SA 16 | Starting adapter | 21 |
| 3 | CBILA AL 16 | Adjustable Length | 10 |
| 4 | CBILA E45 16 | 45° Elbow | 17 |
| 5 | CBILA TC 16 | Tee Cap | 20 |
| 6 | CBILA T45 16 | 45° Tee | 12 |
| 7 | CBILA HB 16 | Hanger bracket | 21 |
| 8 | CBILA I 16 | Increaser | 19 |
| 9 | CBILA T45 20 | 45° Tee | 12 |
| 10 | CBILA E45 20 | 45° Elbow | 17 |
| 11 | CBILA DC 20 | Drain-tee cap | 20 |
| 12 | CBILA WS 20 | Wall support | 22 |
| 13 | CBILA T45 | 45° Tee | 12 |
| 14 | CBILA AP 20 | Anchor Plate | 24 |
| 15 | CBILA AB | Assembly Band | 20 |
| 16 | CBILA FB 20 | Finishing Band | 20 |
| 17 | CBILA FG 20 | Floor Guide | 24 |
| 18 | CBILA 48L 20 | 48" Length | 9 |
| 19 | CBILA FS 20 | Firestop | 26 |
| 20 | CBILA F 20 | Flat Flashing | 31 |
| 21 | CBILA SC 20 | Storm Collar | 30 |
| 22 | CBILA RC 20 | Rain Cap | 34 |



SAMPLE DRAWINGS

Engine Exhaust

| No. | Part No. | Description | Page |
|-----|---------------|------------------------|------|
| 1 | --- | Engine (By other) | --- |
| 2 | --- | Adapter (By others) | --- |
| 3 | --- | Muffler (By others) | --- |
| 4 | CBIL2F SA 12 | Starting adapter | 21 |
| 5 | CBIL2F RV 12 | Relief Valve | 25 |
| 6 | CBIL2F HS 12 | Horizontal Support | 23 |
| 7 | CBIL2F WG 12 | Wall Guide | 25 |
| 8 | CBIL2F 48L 12 | 48" Length | 9 |
| 9 | CBIL2F EJ 12 | Bellow Expansion Joint | 10 |
| 10 | CBIL2 T45 12 | 45° Tee | 12 |
| 11 | CBIL2F WS 12 | Wall Support | 22 |
| 12 | CBIL2F DC 12 | Drain-tee cap | 20 |
| 13 | --- | Drain pipe (By others) | --- |
| 14 | CBIL2F FG 12 | Floor Guide | 24 |
| 15 | CBIL2F FS 12 | Firestop | 26 |
| 16 | CBIL2F WG 12 | Wall Guide | 25 |
| 17 | CBIL2F FS 12 | Firestop | 26 |
| 18 | CBIL2F AP 12 | Anchor Plate | 24 |
| 19 | CBIL2F 48L 12 | 48" Length | 9 |
| 20 | CBIL2F WG 12 | Wall Guide | 25 |
| 21 | CBIL2F IS 12 | Insulated sleeve | 28 |
| 22 | CBIL2F IS 12 | Insulated sleeve | 28 |
| 23 | CBIL2F VF 12 | Ventilated Flashing | 32 |
| 24 | CBIL2F VC 12 | Ventilated Collar | 30 |
| 25 | CBIL2F WG 12 | Wall Guide | 25 |
| 26 | CBIL2F FB 12 | Finishing Band | 20 |
| 27 | CBIL2F EC 20 | Exhaust cone | 33 |





1-YEAR STANDARD WARRANTY

Models CBIL, CBIL2, CBIL2F, CBIL4F

CBILA, CBIL1, and CBIL1F

All components of our models CBIL, CBIL2, CBIL2F and CBIL4F chimney system have been inspected in our workshop in accordance with our quality standards. Cleaver-Brooks warrants the chimney/exhaust system and components against defects in material and workmanship for a period of (1) one year from date of delivery to the purchaser. During this period, any system or component supplied by Cleaver-Brooks failing to perform its intended function of exhausting, without adverse leakage, combustion by-products from engine or heating appliance will be repaired or replaced at the manufacturer option.

This warranty is limited to repair or replacement of any component which has been proven defective by a factory-authorized inspector by Cleaver-Brooks. This warranty does not cover any labor cost or freight charge for removal or replacement of the defective product, nor does this warranty cover any system component not furnished by Cleaver-Brooks and installed as part of the system. The warranty on any repaired or replacement component shall be for a duration no longer than the remaining or unexpired term of the original warranty.

This standard warranty is subject to the following conditions:

- a) Generally accepted engineering practices have been followed to determine that sizing and material specifications are suitable for the application and environment involved.
- b) The undamaged components have been correctly installed in accordance with the installation instructions published by Cleaver-Brooks at the time of shipment.

The standard warranty is extended to a **15-YEAR LIMITED WARRANTY** provided the following conditions are satisfied:

- a) The chimney must have been connected to an appliance listed by a testing authority recognized by the federal government. Also, this warranty is void if the appliance was not installed, used and maintained according to the manufacturer instructions.
- b) The chimney system must have been designed and sized by the engineering department of Cleaver-Brooks. All design and operating parameters provided to Cleaver-Brooks must meet the standards of Cleaver-Brooks and must be accurately representative of the operating conditions.
- c) The undamaged components must have been correctly installed, used and maintained in accordance with the instructions published by Cleaver-Brooks at the time of shipment.
- d) Air used in combustion must be free from any solvent or refrigerant vapor and from any halogenated compound which might generate acid condensate within the flue or chimney.
- e) Cleaver-Brooks has supplied the entire chimney or exhaust system from the appliance outlet to the stack termination.
- f) Prior to start-up and thereafter, exposed galvanized and aluminized steel surfaces are at all times protected with a minimum of one base coat primer and one finish coat of heat and corrosion resistant paint.

In no event shall Cleaver-Brooks be liable for any incidental or consequential damages of any kind or for any damage resulting in whole or in part from misuse, improper installation, removal and/or reuse of components or inadequate maintenance of the system or any component part thereof. In no event shall Cleaver-Brooks be liable for any cost of installation, removal and reinstallation. Cleaver-Brooks assumes no liability in case of fire, chimney fire, lightning or act of God. This warranty is in lieu of all other express warranties or guarantees of any kind. All implied warranties, including merchantability and fitness, are limited to the duration of the express warranty contained herein. Cleaver-Brooks neither assumes nor authorizes any other person to assume on its behalf any other liability in connection with products sold. No agent is authorized to make any modification to this warranty or additional warranties, even if in writing, binding Cleaver-Brooks.

The purchaser or complainant must send all claims under this warranty in writing to Cleaver-Brooks Customer Service Department.

Warranty



Exhaust Solutions
545 Fernand-Poitras, Terrebonne, Qc, Canda J6Y 1Y5
450.625.6060 · 866.625.6060
cleaverbrooks.com/exhaustsolutions · exhaustsales@cleaverbrooks.com