

# SPIRAL PIPE - ROUND DOUBLE WALL

Duct Direct Pipe and Fittings are manufactured in accordance with 2005 SMACNA Duct Construction Standards (1995 SMACNA Standards on request)

\*Double Wall construction, in general, is comprised of an airtight outer shell with a 1" or 2" insulation layer sandwiched by a perforated liner or solid liner. Insulation is .75 pound per cubic feet density fiberglass with a K factor of .26 BTU per square foot per degree Fahrenheit per hour, and the following underwriter's ratings:

Flame Spread	10 - 25
Fuel Contributed	10 - 15
Smoke Developed	0 - 15

The outer shell and inner liner are manufactured from Galvanized steel meeting ASTM A-527-71 in gauges hereinafter specified. If perforated inner liner is specified, perforations are 3/32" diameter hole on 3/16" staggered centers with an open area of 23%. Insulation ends are supplied where single wall duct is connected to double wall duct to allow the double wall duct to connect to the single wall duct.

## DOUBLE WALL SUBMITTAL

Round Double Wall Duct is constructed of Galvanized Steel with a 4-ply spiral lock seam of the following minimum U.S. standard gauges:

NOMINAL (O.D.) SIZE	OUTER SHELL GAUGE	INNER LINER GAUGE
5" - 26"	26	26
27" - 36"	24	26
37" - 50"	22	24
51" - 60"	20	22
61" and up	18	20

\*All pipe cut to length unless otherwise noted

## DOUBLE WALL FITTINGS SUBMITTAL

Galvanized Steel Fittings are constructed of the following minimum U.S. standard gauges:

NOMINAL (O.D.) SIZE	OUTER SHELL GAUGE	INNER LINER GAUGE
5" - 26"	24	24
27" - 36"	22	24
37" - 50"	20	22
51" - 60"	18	20
61" and up	16	18

\*Divided flow fittings are made with an airtight outer shell and a tack welded inner lining. Insulation is packed around the branch area completely, filling the cavity.

## DOUBLE WALL ELBOW SUBMITTAL

3 gores and 5 gores respectively are constructed with a centerline radius equal to 1½ times the diameter of the elbow.

ELBOW ANGLE	NUMBER OF GORES
Up to 30°	2
31° - 60°	3
61° - 90°	5

## 2-PIECE MITERED ELBOW VANE SCHEDULE

2 piece mitered elbows with turning vanes will be used where space is limited

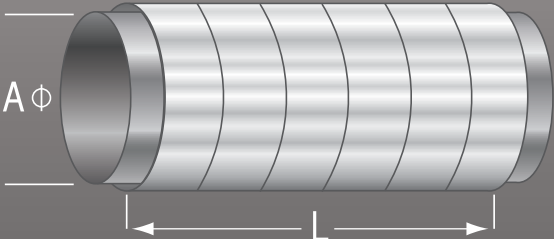
NOMINAL DIAMETER	NUMBER OF VANES
3" - 9"	3
10" - 13"	4
14" - 19"	5
20" - 57"	6
58" +	12" SPACING

## COUPLINGS

Pipe-to-pipe joints to 30" I.D. diameter are inner & outer male sleeve coupling. Pipe-to-fitting joints to 30" I.D. diameter are inner & outer slip fit; collar of fitting projecting into pipe. Above 30" I.D. inner Direct Flanges are recommended.

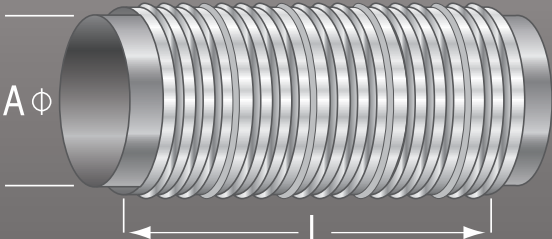
# DOUBLE WALL SPIRAL

SMOOTH SPIRAL PIPE



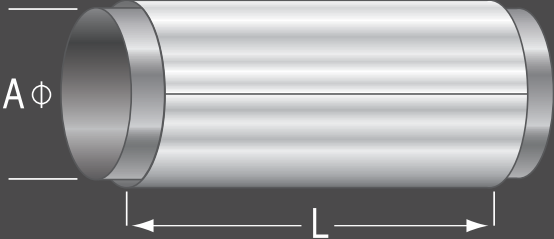
F157-DW

TRIPLE RIB SPIRAL PIPE



F158-DW

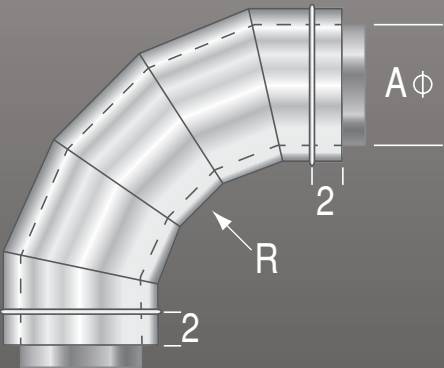
LONG SEAM PIPE



F165-DW

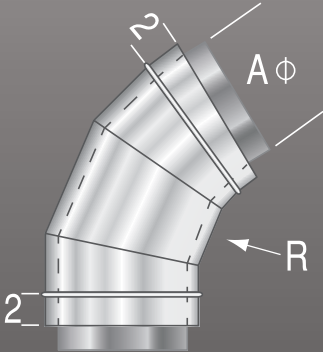
# DOUBLE WALL - ELBOWS

**90° GORED ELBOW  
3" DIAMETER AND LARGER**



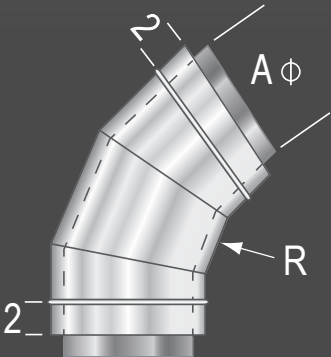
F52-90-DW

**45° GORED ELBOW  
3" DIAMETER AND LARGER**



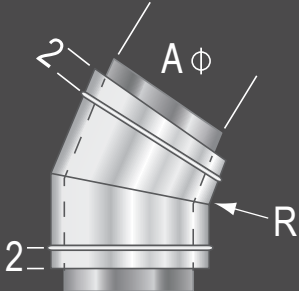
F52-45-DW

**60° GORED ELBOW  
3" DIAMETER AND LARGER**



F52-60-DW

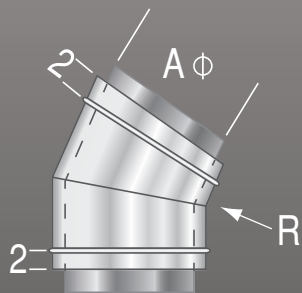
**30° GORED ELBOW  
3" DIAMETER AND LARGER**



F52-30-DW

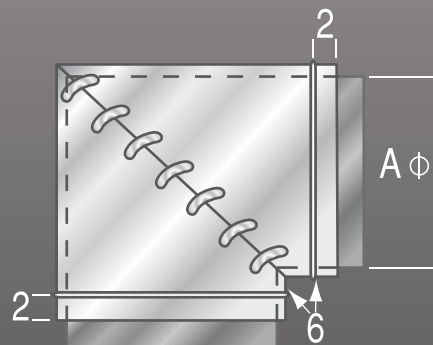
# DOUBLE WALL - ELBOWS

**22.5° GORED ELBOW  
3" DIAMETER AND LARGER**



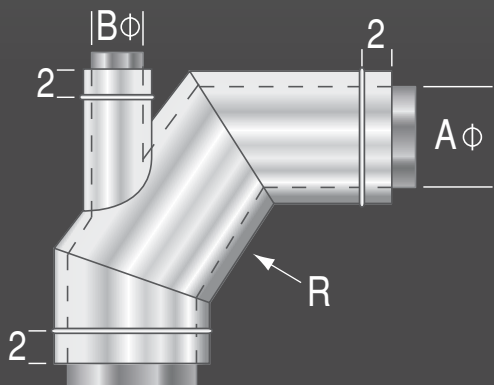
F52-22.5-DW

**RND SQUARE THROAT ELBOW W/  
VANES 3" DIAMETER AND LARGER**



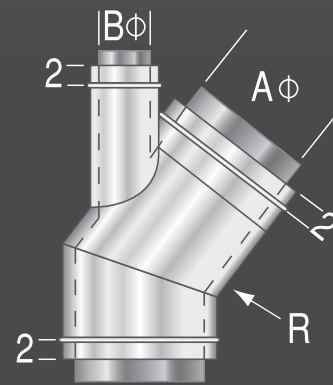
F92-DW

**HEEL-TAPPED 90° ELBOW**



F91-DW

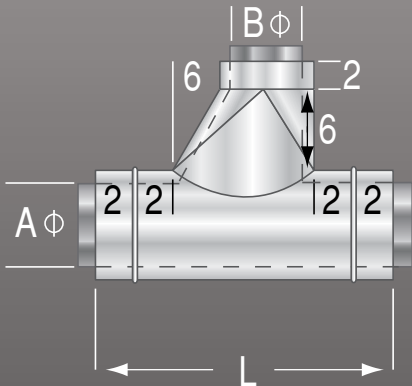
**HEEL-TAPPED 45° ELBOW**



F52-45TAP-DW

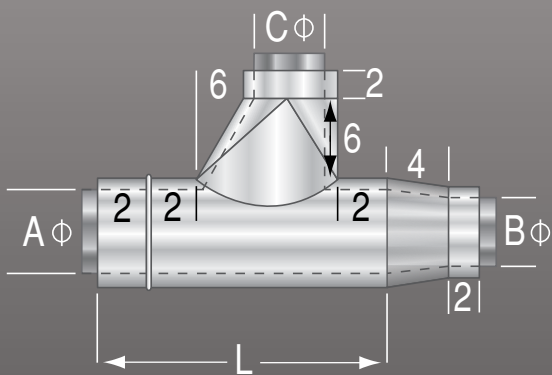
# DOUBLE WALL - BOOT TEES

**BOOT TEE**



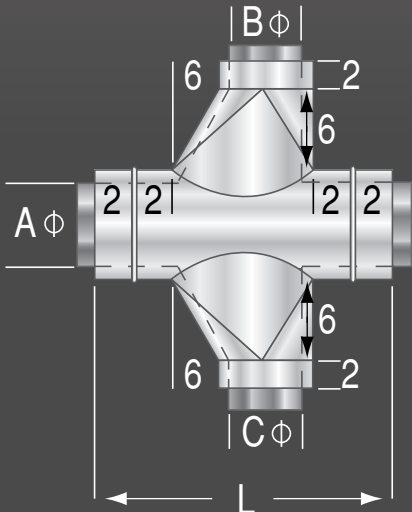
F243-DW

**BOOT TEE W/ REDUCER**



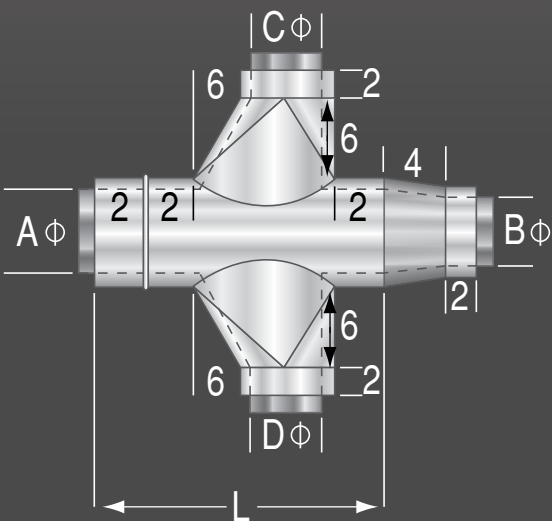
F223-DW

**BOOT CROSS**



F85-DW

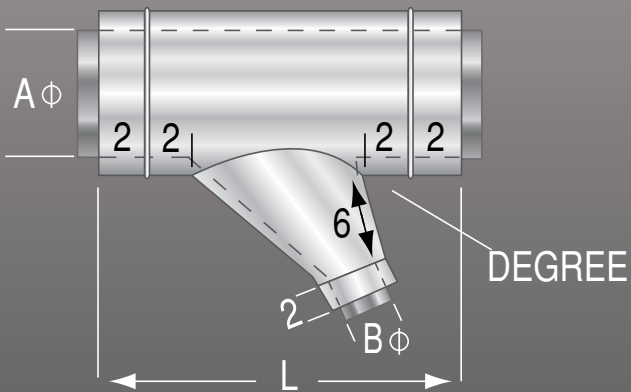
**BOOT CROSS W/ REDUCER**



F228-DW

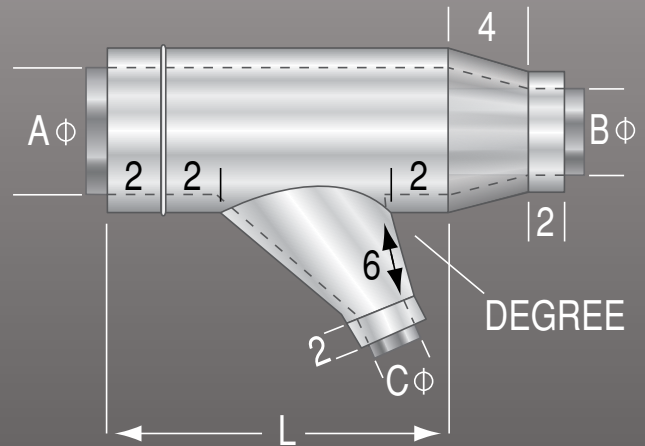
# DOUBLE WALL - CONICAL LATERALS

CONICAL LATERAL



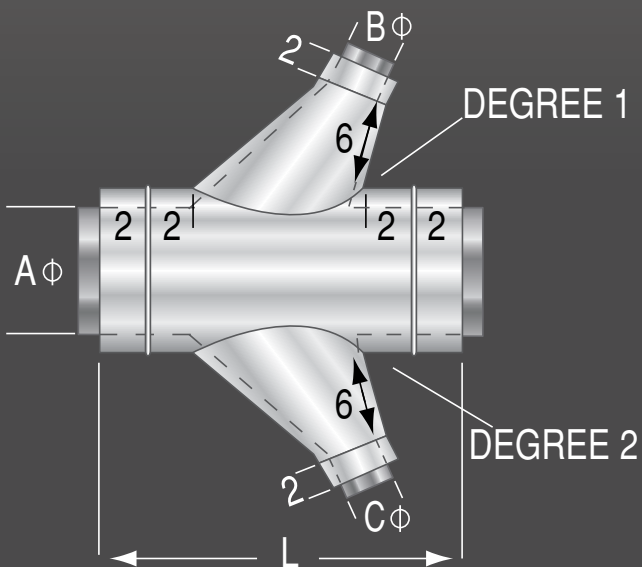
F112-DW

CONICAL LATERAL W/ REDUCER



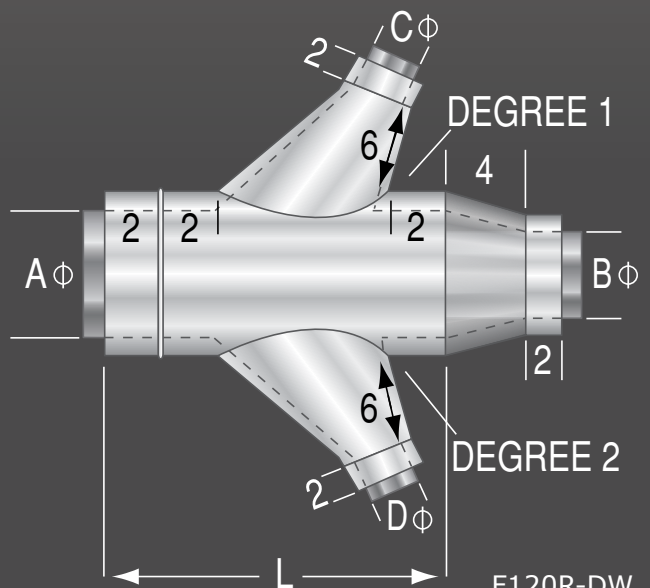
F112R-DW

CONICAL LATERAL TEE



F120-DW

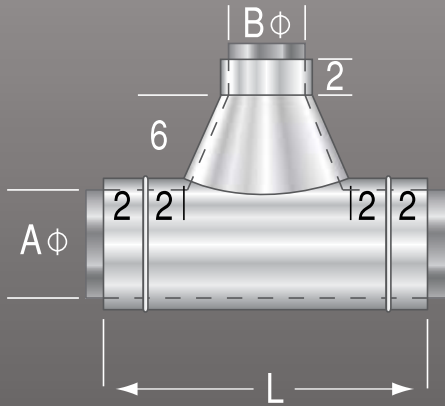
CONICAL LATERAL TEE W/ REDUCER



F120R-DW

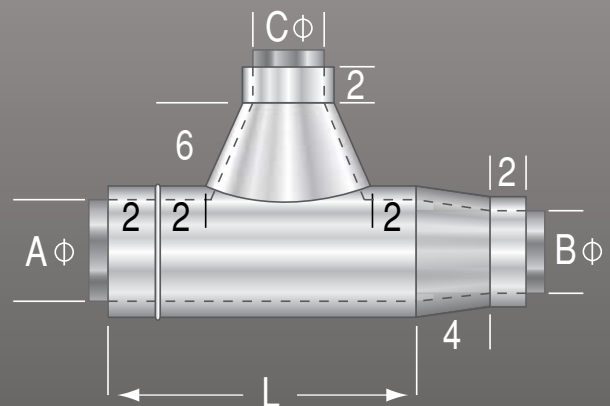
# DOUBLE WALL - CONICAL TEES

CONICAL TEE



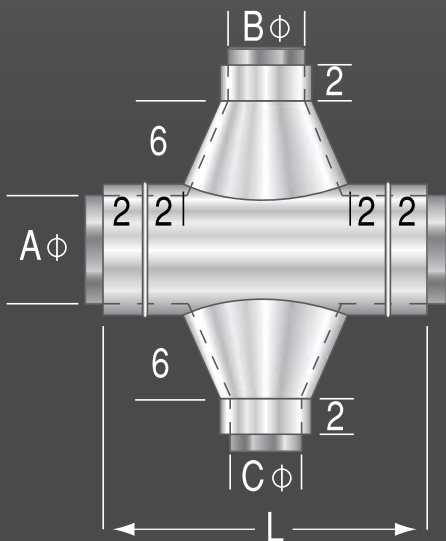
F56-DW

CONICAL TEE W/ REDUCER



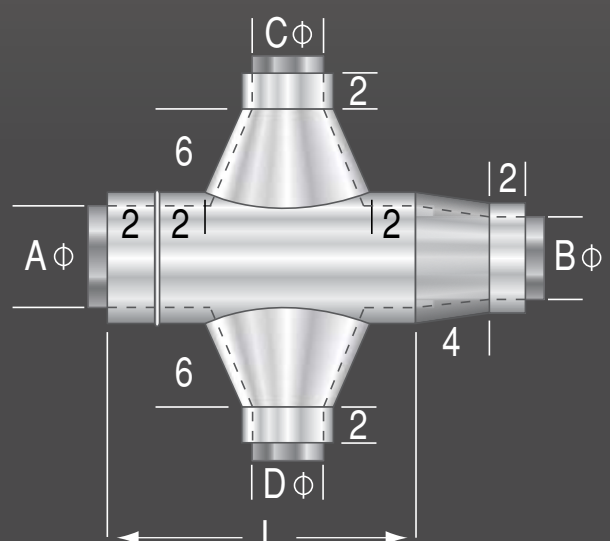
F61-DW

CONICAL TEE CROSS



F245-DW

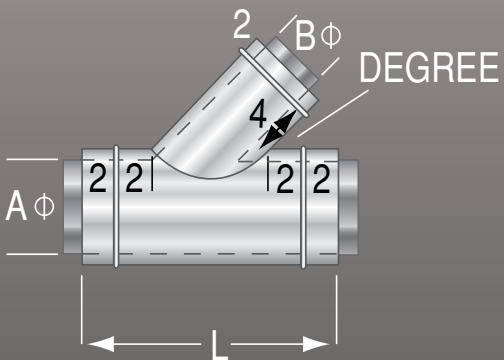
CONICAL TEE CROSS W/ REDUCER



F62-DW

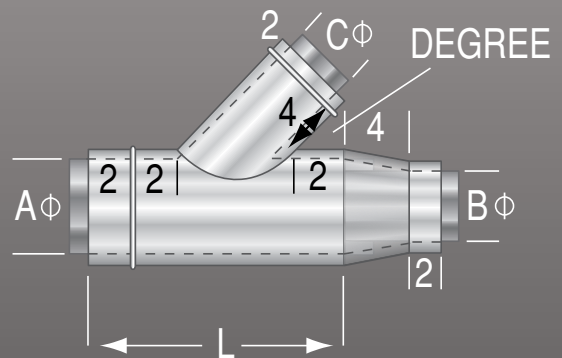
# DOUBLE WALL - STRAIGHT LATERALS

LATERAL



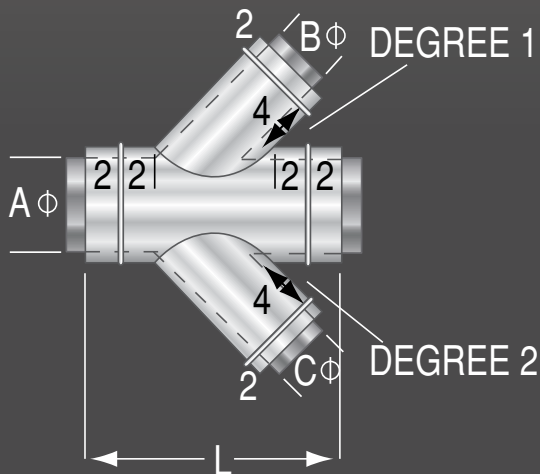
F54-DW

LATERAL W/ REDUCER



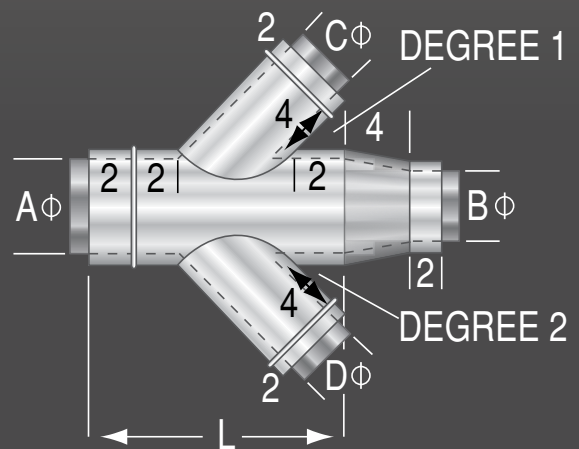
F63-DW

LATERAL CROSS



F118-DW

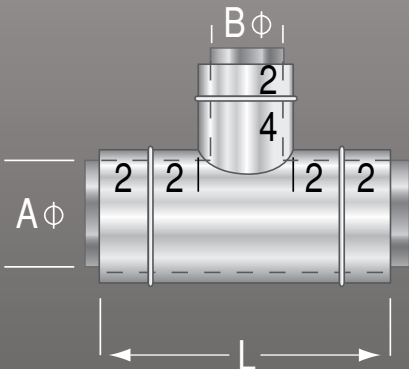
LATERAL CROSS W/ REDUCER



F64-DW

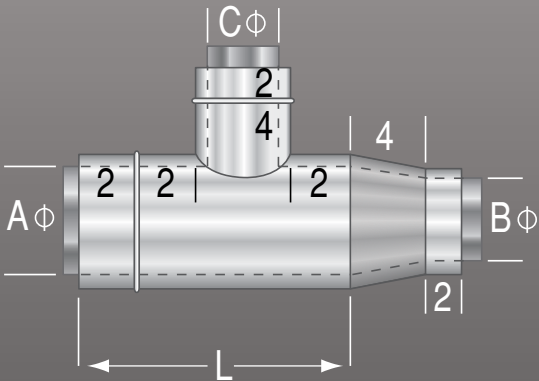
# DOUBLE WALL - STRAIGHT TEES

TEE



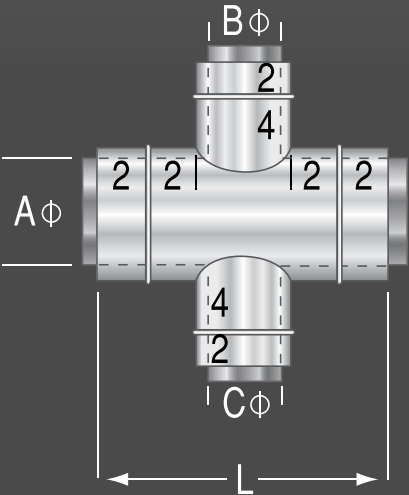
F55-DW

TEE W/ REDUCER



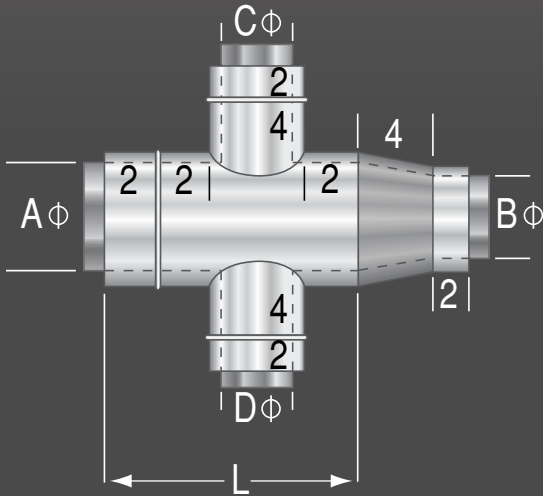
F65-DW

TEE CROSS



F117-DW

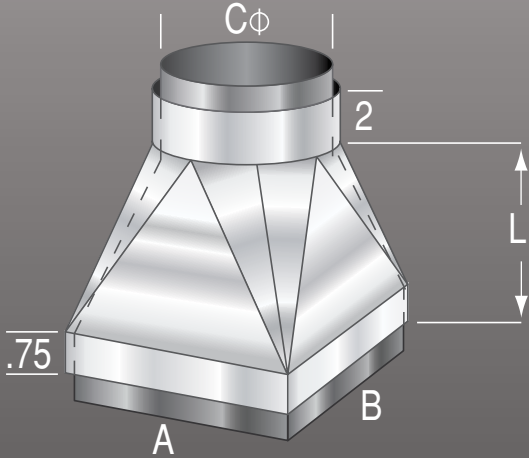
TEE CROSS W/ REDUCER



F66-DW

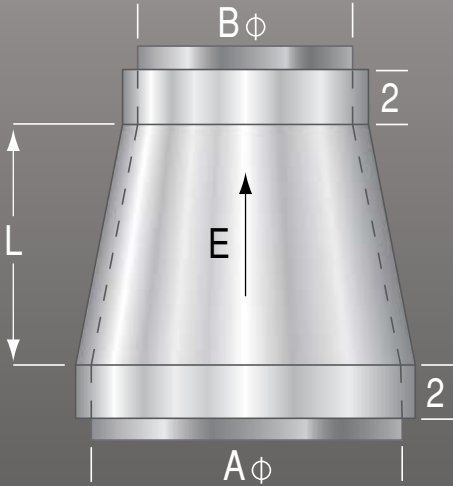
# DOUBLE WALL - ROUND FITTINGS

SQUARE TO ROUND



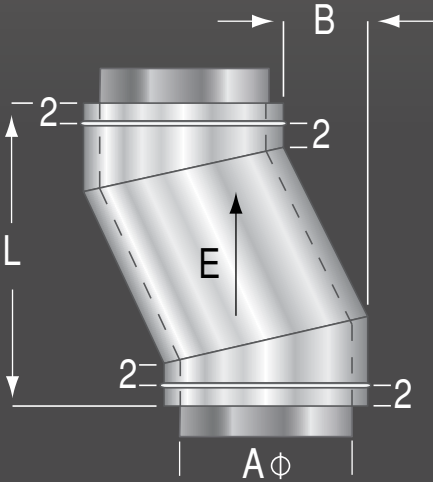
F50-DW

OFFSET REDUCER



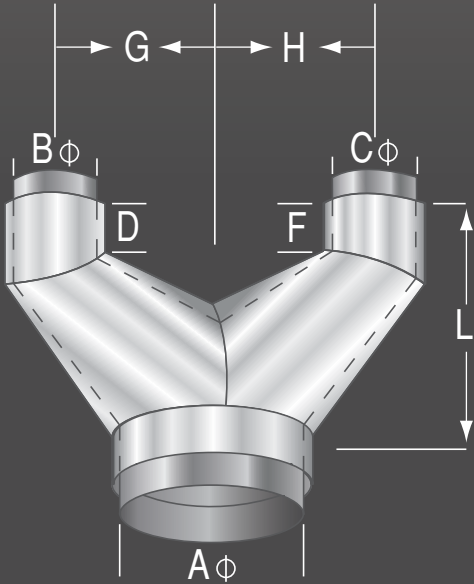
F69-DW

ROUND OFFSET



F53-DW

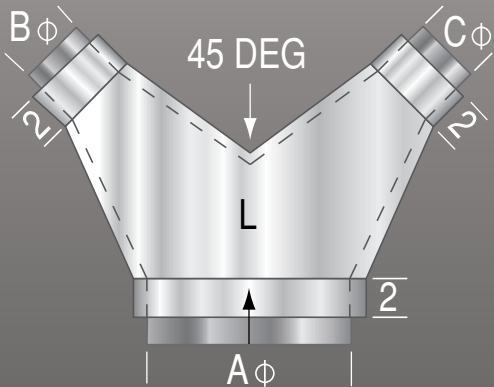
GORED WYE



F78-DW

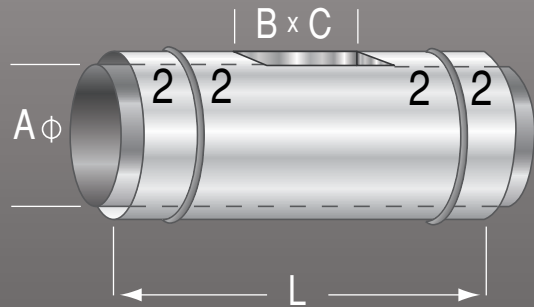
# DOUBLE WALL - ROUND FITTINGS

VARIATION WYE BRANCH



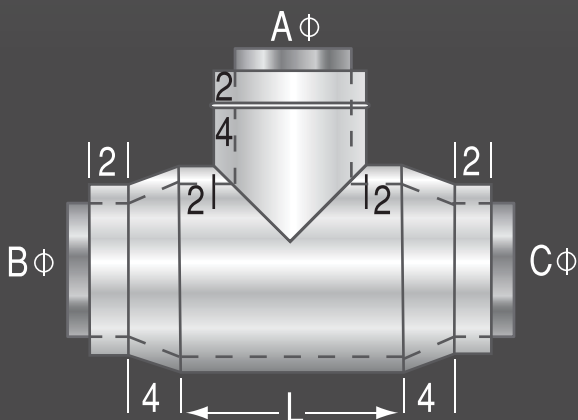
F71-DW

ROUND PIPE W/ SQ. ACCESS HOLE



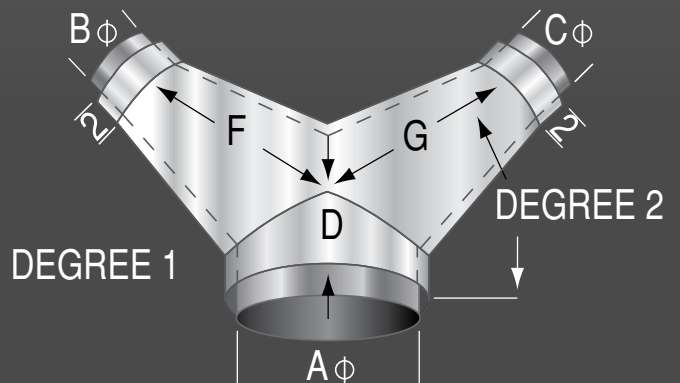
F90-DW

REDUCING BULLHEAD TEE



F255-DW

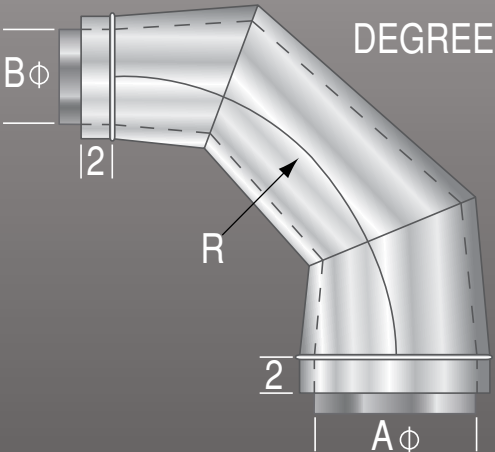
THREE PIECE WYE



F94-DW

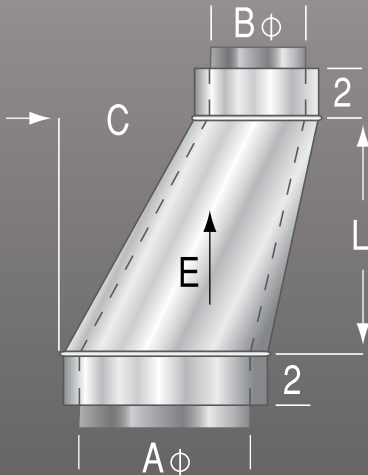
# DOUBLE WALL - ROUND FITTINGS

REDUCING GORED ELBOW



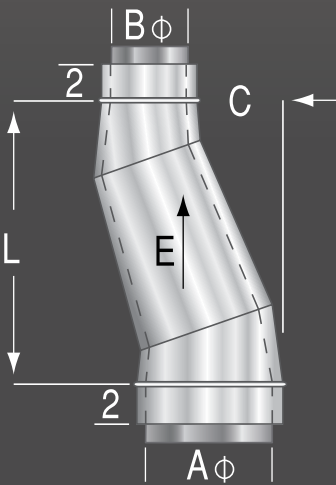
F284-DW

ROUND TRANSITION



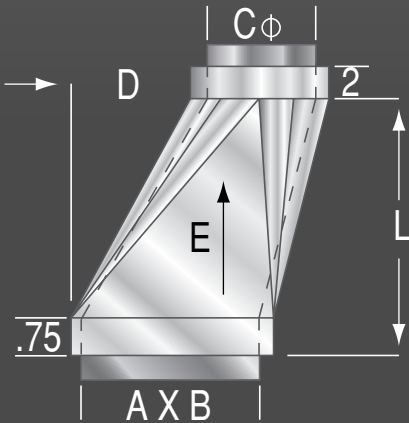
F69-DW

REDUCING OFFSET



F70-DW

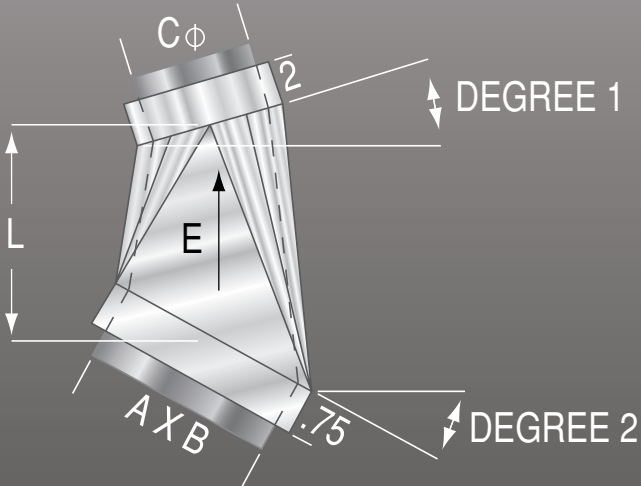
OFFSETTING SQUARE TO ROUND



F74-DW

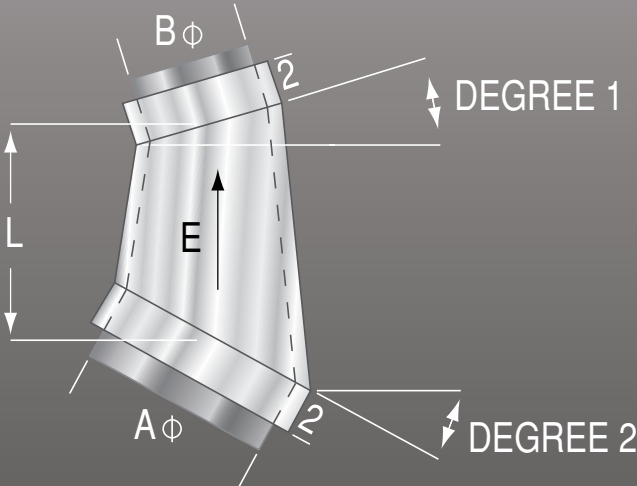
# DOUBLE WALL - ROUND FITTINGS

MITERED SQUARE TO ROUND



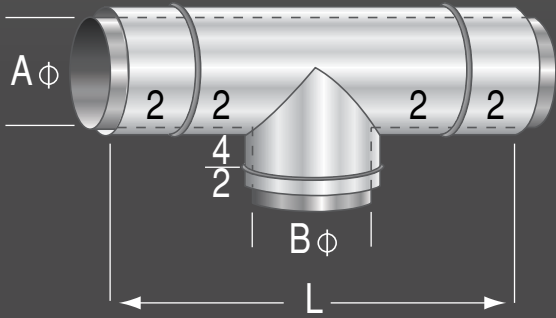
F58-DW

MITERED ROUND REDUCER



F59-DW

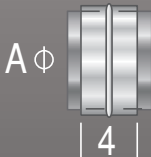
BULLHEAD TEE W/ VANES



F255-DW

# DOUBLE WALL - MISCELLANEOUS

## DUCT COUPLING



F100-IS-DW

## END CAP



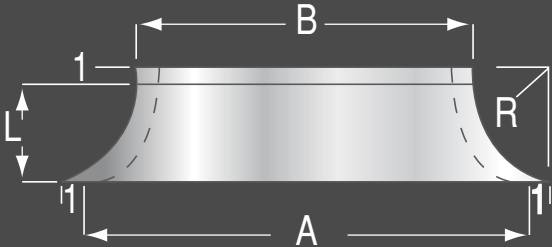
F142-DW

## FITTING COUPLING



F100-SS-DW

## BELL MOUTH (STANDARD RADIUS) (SHORT RADIUS)



BM-DW