McGill AirFlow Corporation

An enterprise of United McGill Corporation - Founded in 1951

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Double-Wall, Round Duct and Fittings Dimensions

McGill AirFlow Corporation has a complete line of double-wall, insulated round duct and fittings. Each piece is constructed of an inner liner (either perforated or solid metal) surrounded by a layer of fiberglass insulation and covered by a solid metal pressure shell. The insulation is available in 1-, 2-, and 3-inch standard thicknesses and a maximum 1.5 pounds per cubic feet (pcf) density[1] to meet the thermal and acoustical performance requirements found in most HVAC systems.

Table 1 - Double-wall, Round Duct- Available Sizes, Materials, and Thicknesses[2]

Construction	Inner Liner Diameters			Lengths[3]	Materials[4,5]	Thicknesses[9]
	1-inch k27	2-inch k27	3-inch k27			
ACOUSTI-k27® Duct (spiral lockseam)	3-82 inches	3-80 inches	3-78 inches	1-20 feet	Galvanized Steel	28-14 gauge
					Stainless Steel	26-20 gauge
	3-58[6] inches	3-56[6] inches	3-54[6] inches		Aluminum	0.025-0.063 inch[6]
UNI-RIB-k27® Duct (spiral lockseam with standing rib)	7-58 inches	5-56 inches	3-54 inches	1-20 feet	Galvanized Steel	28-22 gauge
					Aluminum	0.025-0.050 inch
Longitudinal Seam-k27® Duct[7] (solid welded)	8-88 inches	8-86 inches	8-84 inches	1-6 feet	Galvanized Steel	20-10 gauge
					Stainless Steel	22-10 gauge
	8-82[6] inches	8-80[6] inches	8-78[6] inches		Aluminum	0.040-0.090 inch[6]

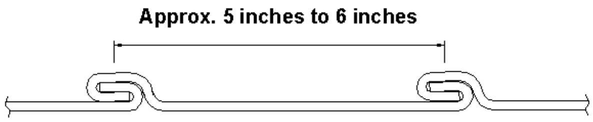
Table 2 - Double-Wall, Round Fittings- Available Sizes, Materials, and Thicknesses[2]

Construction	Inner Liner Diameters			Materials[4,5]	Thicknesses
	1-inch k27	2-inch k27	3-inch k27		
ACOUSTI-k27 Fittings[8] (spot welded and bonded, or standing seam)	3-88 inches	3-86 inches	3-84 inches	Galvanized Steel	26-10 gauge
				Stainless Steel	26-10 gauge
	3-82 inches	3-80 inches	3-78 inches	Aluminum	0.032-0.090 inch[6]

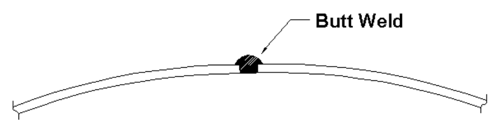
1. Standard insulation density is 1.0 pcf.
2. Except as noted, McGill AirFlow double-wall, round duct and fittings are available with the following outer shell dimensions: 5-inch through 15-inch diameters in ½-inch-diameter increments, 16-inch through 38-inch diameters in 1-inch diameter increments, 40-inch through 90-inch diameters in 2-inch diameter increments. Standard duct liners are perforated metal. Standard fitting liners are solid metal. Standard insulation is fiberglass
3. Standard lengths of round ACOUSTI-k27 and UNI-RIB-k27 duct are 10, 12, and 20 feet; longer lengths are available on special order. Standard lengths of round Longitudinal Seam-k27 duct are 5 and 6 feet.
4. Double-wall, round duct and fittings are also available in carbon steel, paintable galvanized steel, and aluminized steel.
5. UNI-COAT® double-wall, round duct and fittings (polyvinyl-chloride-coated galvanized steel) are available on special order.
6. Aluminum double-wall round, duct and fittings are available in larger diameters and greater metal thicknesses on special order.
7. Round Longitudinal Seam-k27 duct is available with inner liner diameters less than 8 inches on special order.
8. Fittings 16 gauge (Aluminum - 0.090 inch) or heavier are fully welded.
9. See Table 3 for the full range of available spiral duct diameters by thickness.

Duct Construction

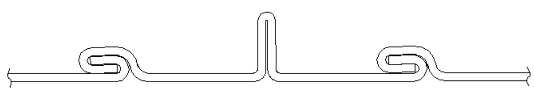
Spiral Lockseam



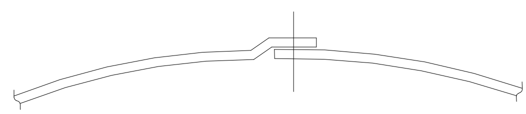
Longitudinal Seam



Spiral Lockseam with Standing Rib



RL-2 Seam Type



Up to ± 10 in.wg.	Spot weld 1 inch or lap, rivet, and tack weld 3 inches
Up to ± 4 in.wg.	Spot weld 2 inches or lap, rivet, and tack weld 6 inches

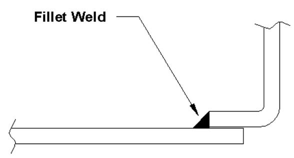
Table 3 - Available Range of Spiral Duct Outer Shell Diameters by Thickness[1]

Gauge	Galvanized Steel, Aluminized Steel and Nongalvanized Carbon Steel		Stainless Steel (304, 304L, 316 and 316L)	Polyvinyl-chloride-coated galvanized steel	Aluminum[2]		
	Spiral Lockseam Diameter (inches)	Spiral Lockseam with Standing Rib Diameter (inches)	Spiral Lockseam Diameter (inches)	Spiral Lockseam Diameter (inches)	Thickness (inches)	Spiral Lockseam Diameter (inches)	Spiral Lockseam with Standing Rib Diameter (inches)
28	5 - 14 1/2	9 - 42	N/A	N/A	0.025	5 - 26	9 - 42
26	5 - 26	9 - 60	5 - 36	5 - 26	0.032	5 - 50	9 - 60
24	5 - 36	9 - 60	5 - 50	5 - 34	0.040	5 - 60	N/A
22	5 - 50	9 - 60	5 - 60	5 - 50	0.050	5 - 60	N/A
20	5 - 60	N/A	5 - 84	15 - 60	0.063	5 - 60	N/A
18	5 - 84	N/A	N/A	15 - 84			
16	6 - 84	N/A	N/A	N/A			
14	24 - 84	N/A	N/A	N/A			

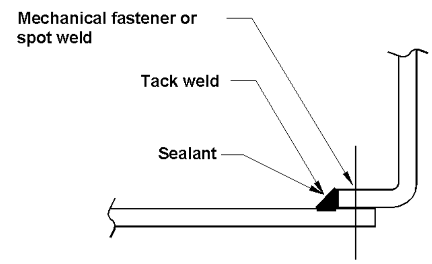
[1] Thicker material may be available in some diameter ranges; check with your local sales office.
[2] Aluminum double-wall, round, spiral duct is available in larger diameters on special order.

Fitting Construction

Solid Welded

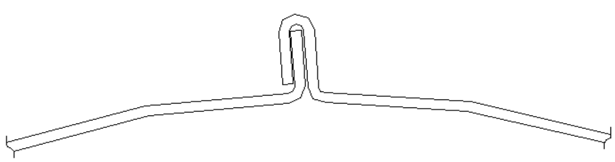


Spot Welded
Tack Welded
Mechanical Fastened



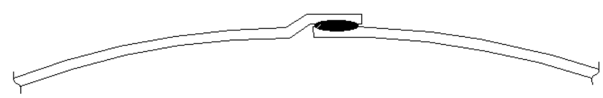
Sealed with United Duct Sealer™ (Water Based)

Standing Seam



Sealed with United Duct Sealer™ (Water Based)

Resistance Seam Welded



Sealed with United Duct Sealer™ (Water Based)

Dimensioning

(All alphanumeric dimensions are in inches, all angles are in degrees)

A	**-**	Main barrel inlet diameter
B	**-**	Main barrel outlet diameter
C or D	**-**	Branch tap diameter (Note: On tee and lateral fittings with two taps, C is the branch closest to the inlet of the fitting. On cross fittings, C is the larger of the two taps.)
t	**-**	Insulation/liner thickness
R	**-**	Centerline radius
S	**-**	Slip-fit dimension of a fitting
F, H, J, L, Q, V, Z, m, α	**-**	Miscellaneous dimensions (refer to specific drawings)
θ or φ	**-**	Angular measurements (refer to specific drawings)
#	**-**	Number of elbow gores

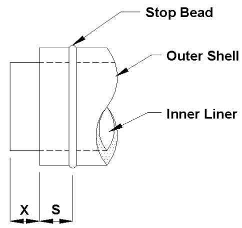
General Notes:

- Dimensions other than diameters are held within a 1/4-inch tolerance.

- The outer shell diameter of double-wall duct and fittings is equal to the inner liner diameter plus two times the insulation thickness.

- Unless ordered otherwise, the inner liners and outer shells of double-wall, round fittings are sized to slip fit into the inner liners and outer shells of double-wall, round duct.

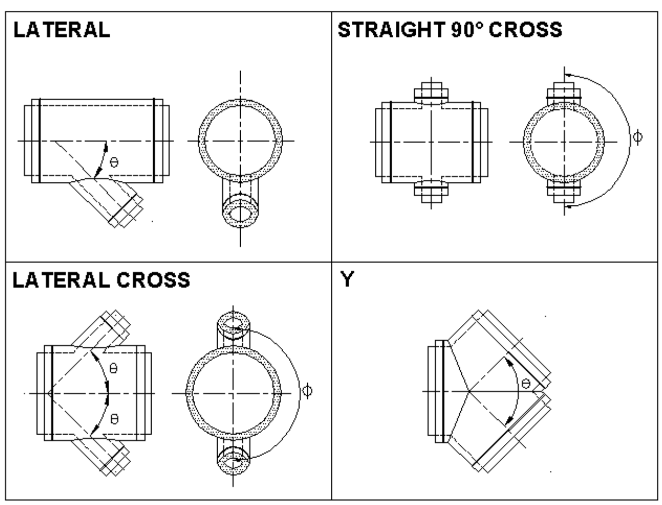
- Double-wall fittings ordered for slip-fit assembly have a projecting inner liner slip-fit section as shown in the following drawing:



Where: S = 2 inches
X = 1 inch for inside diameters less than or equal to 7 inches
X = 2 inches for inside diameters greater than 7 inches

- Double-wall duct and fittings can be ordered with Van Stone or applied connectors installed on the outer shell. For these cases the inner liner does not project beyond the outer shell (X = 0 inches) and a slip-fit, single-wall coupling or safe-off should be ordered to align the inner liners of mating duct and fittings. Van Stone connectors change the makeup dimensions of standard slip-fit dimension ends. Refer to the details on page 36 for further information.

- Unless ordered otherwise, the branch taps of laterals, crosses, lateral crosses, and Y-fittings are installed at standard angles to the fittings' bodies and to each other, as shown in the following drawings:



For all:

Laterals, θ standard = 45°
Crosses, θ standard = 90°, φ standard = 180°
Lateral Crosses, θ standard = 45°, φ standard = 180°
Y-Fittings, θ standard = 90°

Note: φ is the included angle between taps as viewed in cross section (standard is 180°). When ordering fittings of nonstandard φ, please include an end view.

General Notes:

- For installation information, refer to McGill AirFlow's brochure *Installation of Double-Wall Duct and Fittings.*
- Flat oval and rectangular taps are available in lieu of round. Specify dimensions.
- The Q dimension of laterals and lateral crosses may be less than, equal to, or greater than the V dimension of these fittings.

Designations:

McGill AirFlow uses a designation system that simplifies product nomenclature. Most of our products can be accurately identified using a concise alphanumeric designator. Each character in the designation defines a characteristic of the product.

Example: KR4T refers to a double-wall (K), round (R), 4 in wg pressure class (4), straight tee (T).

1st Character: **Wall Configuration** - **K**R4T

S = Single-wall
I = Single-wall, lined (1 and 1½ inches only)
K = k27 Double-wall

2nd Character: **Shape -** K**R**4T

R = Round
O = Oval

3rd Character: **Pressure** Class - KR**4**T

2 = 0 to +2 in wg
4 = +2 to +4 in wg
0 = +4 to +10 in wg
X = 0 to -2 in wg
Y = -2 to -4 in wg
Z = -4 to -10 in wg
N = nonstandard gauge (user specified)
S = standard gauge of product type

Notes:
1. When ordering duct or fittings, specify 2, 4, 0, X, Y, Z, S, or N in the * position of the designation.
2. Pressure ranges listed for 2, 4, 0, X, Y, and Z are based on 1995 SMACNA Duct Construction Standards (galvanized only).
3. SMACNA is the Sheet Metal and Air Conditioning Contractors National Association.

4th and Subsequent Characters: **Product Type** - KR4**T**

T = Straight Tee (90° branch fitting)

Table 4 - Thickness/Weight Relationships of Standard Materials

Gauge	Galvanized and Paintable Galvanized Steel			Nongalvanized Carbon Steel			Stainless Steel (304 or 316)		
	Minimum Thickness (inches)	Nominal Thickness (inches)	Nominal Weight (lb/sq ft)	Minimum Thickness (inches)	Nominal Thickness (inches)	Nominal Weight (lb/sq ft)	Minimum Thickness (inches)	Nominal Thickness (inches)	Nominal Weight (lb/sq ft)
28	0.0157	0.0187	0.781	0.0129	0.0149	0.625	0.0136	0.0156	0.656
26	0.0187	0.0217	0.906	0.0159	0.0179	0.750	0.0158	0.0188	0.788
24	0.0236	0.0276	1.156	0.0209	0.0239	1.000	0.0220	0.0250	1.050
22	0.0296	0.0336	1.406	0.0269	0.0299	1.250	0.0273	0.0313	1.313
20	0.0356	0.0396	1.656	0.0329	0.0359	1.500	0.0335	0.0375	1.575
18	0.0466	0.0516	2.156	0.0438	0.0478	2.000	0.0450	0.0500	2.100
16	0.0575	0.0635	2.656	0.0548	0.0598	2.500	0.0565	0.0625	2.625
14	0.0705	0.0785	3.281	0.0697	0.0747	3.125	0.0711	0.0781	3.281
12	0.0994	0.1084	4.531	0.0986	0.1046	4.375	0.1000	0.1094	4.594
10	0.1292	0.1382	5.781	0.1285	0.1345	5.625	0.1286	0.1406	5.906

Aluminum 3003-H14		
Minimum Thickness (inches)	Nominal Thickness (inches)	Nominal Weight (lb/sq ft)
0.0230	0.025	0.356
0.0295	0.032	0.456
0.0365	0.040	0.570
0.0465	0.050	0.713
0.0595	0.063	0.898
0.0755	0.080	1.140
0.0855	0.090	1.283
0.0945	0.100	1.426
0.1195	0.125	1.782

Table 5 - Material Specifications

Standard Material	Type	ASTM Number
Galvanized Steel	--	A653, A924
Stainless Steel	304, 304L, 316, 316L	A167, A480
Nongalvanized Carbon Steel	18 - 28 gauge	A366, A568, A569
Aluminum	3003-H14	B209
Aluminized	Type 1	A463

Other types of material are available on special order.

Table 6 - McGill AirFlow Standard Construction Methods

Product	Construction
ACOUSTI-k27 Duct	Spiral lockseam
UNI-RIB-k27 Duct	Spiral lockseam with standing rib
Longitudinal Seam-k27 Duct	Rolled and butt welded
ACOUSTI-k27 Fittings[1]	Standard: Spot/tack welded, or standing seam and sealed. Available fully welded.

[1]UNI-COAT (PVC coated) fittings are button punched, riveted, or screwed and sealed

Table 7 - Unreinforced, Positive Pressure, Double-wall, Round Duct Gauge for Galvanized, Polyvinyl-Chloride (PVC)-Coated Steel, Nongalvanized Carbon Steel, or Stainless Steel

Maximum Outer Diameter (inches)	+2 in wg		+4 in wg		+10 in wg		
	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam with Standing Rib Duct
6	28	26	28	26	28	26	NA
8	28	26	28	26	28	26	NA
10	28	26	28	26	28	26	28
12	28	26	28	26	26	24	28
14	28	26	26	24	26	24	28
16	26	24	26	24	24	22	28
18	26	24	24	24	24	22	28
19 - 26	26	24	24	22	24	22	28
27 - 36	24	22	22	20	22	20	28
37 - 50	22	20	20	20	20	20	26
51 - 60	20	18	18	18	18	18	26
61 - 84	18	16	18	16	18	16	NA

Table 8 - Unreinforced, Positive Pressure, Double-wall, Round Duct Thicknesses (inches) for Aluminum

Maximum Outer Diameter (inches)	Maximum +2 in wg		Maximum +4 in wg		Maximum +10 in wg	
	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings
6	0.025	0.040	0.025	0.032	0.025	0.032
8	0.025	0.040	0.025	0.032	0.025	0.032
10	0.025	0.040	0.025	0.032	0.025	0.032
12	0.025	0.040	0.025	0.032	0.032	0.040
14	0.025	0.040	0.032	0.040	0.032	0.040
16	0.032	0.040	0.032	0.040	0.040	0.050
18	0.032	0.040	0.040	0.040	0.040	0.050
19 - 26	0.032	0.040	0.040	0.050	0.040	0.050
27 - 36	0.040	0.050	0.050	0.063	0.050	0.063
37 - 50	0.050	0.063	0.063	0.063	0.063	0.063
51 - 60	0.063	0.080	NA	NA	NA	NA
61 - 84	NA	0.090	NA	NA	NA	NA

Notes for Tables 7 and 8:

1. Longitudinal seam duct is made up of the same gauge as fittings except as noted in Table 1.
2. Stainless steel has 26 gauge minimum for spiral lockseam duct and 22 gauge minimum for longitudinal seam duct and fittings.
3. Polyvinyl-chloride-coated galvanized steel has 26 gauge minimum and 18 gauge maximum for duct and fittings.
4. Construction of aluminum duct and fittings shall otherwise correspond in the same relationship as for steel duct (see Table 4) for thickness required for equal strength or stiffness. SMACNA does not have aluminum standards for pressures greater in magnitude than 2 in wg.
5. The rating of +10 in wg for ribbed duct is based on McGill AirFlow laboratory testing.

Table 9 - Negative Pressure, Double-wall, Round Duct Gauge for Galvanized, Polyvinyl-Chloride (PVC)-Coated Steel, Nongalvanized Carbon Steel, or Stainless Steel

Maximum Outer Diameter (inches)	-2 in wg		-4 in wg		-10 in wg	
	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings
6	28	26	28	26	26	26
7	28	26	28	26	26	26
8	28	26	28	26	26	26
9	28	26	28	26	26	24
10	28	26	26	26	26	22
11	28	26	26	24	26	22
12	28	26	26	24	24	22
13	28	26	26	24	24	20
14	28	24	24	22	24	20
15	28	24	24	22	22	20
16	26	24	24	22	22	18
17	26	24	24	20	22	18
18	24	22	24	20	22	18
19	24	22	24	20	22	18
20	24	22	22	20	22	18
21	24	20	22	18	22	18
22	24	20	22	18	22	16
23	24	20	22	18	20	16
24	22	20	22	18	20	16
25-26	22	20	20	18	20	18 A4
27-29	22	18	20	16	18	16 A4
30	22	18	20	16	18	16 B4
31-33	20	18	20	16	18	16 B4
34	20	18	20	20 A6	18	16 B4
35-36	20	16	20	20 A6	18	16 B4
37-42	20	16	18	18 B6	18 F12	
43-48	20	18 A6	18	18 B6	18 F6	
49-60	18	18 B4	18 F6	16 B4	18 F6	
61-72	16		18 F6		16 F4	

Notes for Table 9:

1. Longitudinal seam duct is made of the same gauge as fittings except as noted in Table 1.
2. Stainless steel has 26 gauge minimum for spiral lockseam duct and 22 gauge minimum for longitudinal seam duct and fittings.
3. Polyvinyl-chloride-coated galvanized steel has 26 gauge minimum and 18 gauge maximum for duct and fittings.
4. The letter in the table means that the reinforcement angles or their equivalent must be used at the foot interval following the letter. The angle sizes are:

   A = 1"x1"x1/8"; B = 1-1/4"x1-1/4"x3/16"; C = 1-1/2"x1-1/2"x3/16"; D = 1-1/2"x1-1/2"x1/4"; E = 2"x2"x3/16"; F = 2"x2"x1/4".
5. If companion flange joints are used as reinforcements, those for 25" to 36" outer diameter shall be 1-1/2"x1-1/2"x3/16"; for 37" to 48" outer diameter 2"x2"x3/16"; for 50" to 60" outer diameter 2-1/2"x2-1/2"x3/16"; for 61" to 72" outer diameter 3"x3"x1/4".

Table 10 - Reinforced and Unreinforced, Negative Pressure, Double-wall, Round Duct Thicknesses (inches) for Aluminum

Maximum Outer Diameter (inches)	Maximum -2 in wg		Maximum -4 in wg		Maximum -10 in wg	
	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings	Spiral Lockseam Duct	Longitudinal Seam Duct or Fittings
3 - 8	0.025	0.040	0.025	0.040	0.032	0.040
9	0.032	0.040	0.025	0.040	0.032	0.040
10 - 11	0.032	0.040	0.032	0.040	0.032	0.050
12	0.032	0.040	0.032	0.040	0.040	0.050
13	0.032	0.040	0.032	0.040	0.040	0.063
14	0.032	0.040	0.040	0.050	0.040	0.063
15	0.040	0.050	0.040	0.050	0.050	0.063
16	0.040	0.050	0.040	0.050	0.050	0.080
17 - 18	0.040	0.050	0.040	0.063	0.050	0.080
19	0.040	0.050	0.040	0.063	0.050	0.080
20	0.040	0.050	0.050	0.063	0.050	0.080
21	0.040	0.050	0.050	0.080	0.050	0.080
22	0.040	0.050	0.050	0.080	0.050	0.090
23	0.040	0.050	0.050	0.080	0.063	0.090
24	0.040	0.050	0.050	0.080	NA	0.090
25-26	0.040	0.050	0.063	0.080	NA	0.080 A4
27-29	0.050	0.063	0.063	0.090	NA	0.090 A4
30 - 33	0.050	0.063	0.063	0.090	NA	0.090 B4
34 - 36	0.050	0.063	0.063	0.063 A6	NA	0.090 B4
37 - 48	0.063	0.080	0.080	0.080 B6	NA	NA
49-50	0.063	0.080	NA	0.090 B4	NA	NA
51-60	NA	0.090	NA	0.090 B4	NA	NA

Notes for Table 10:

1. Longitudinal seam duct is made of the same gauge as fittings except as noted in Table 1.
2. Construction of aluminum duct and fittings shall otherwise correspond in the same relationship as for steel duct (see Table 4) for thickness required for equal strength or stiffness. SMACNA does not have aluminum standards for pressures greater in magnitude than 2 in wg
3. The letter in the table means that the reinforcement iron angles or their equivalent must be used at the foot interval following the letter. The angle sizes are:
   A = 1"x1"x1/8"; B = 1-1/4"x1-1/4"x1/8"

Table 11 - Positive Pressure, Double-wall, Round Duct Gauges for Polyvinyl-Chloride (PVC)-Coated Steel for Underground Duct Systems

Outer Diameter (inches)	Spiral Duct Gauge Maximum +10 in wg	Fitting Gauge Maximum +10 in wg
4 - 8	26	24
8 ½ - 16	24	22
18 - 24	22	22
26 - 32	20	20
34 - 60	18	18

Table 12 - Double-Wall, Round Duct and Fittings: standard diameter/thickness relationships of inner liners.

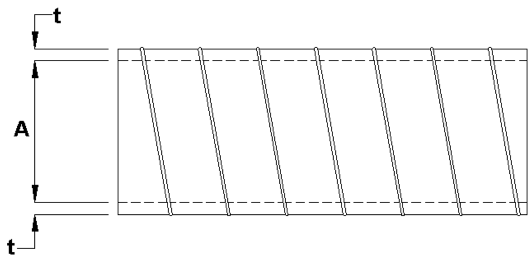
Inner Liner Diameter (inches)	Duct Inner Liner Thickness (gauge)	Duct Inner Liner Construction	Fitting Inner Liner Thickness (gauge)
3 - 8 ½	28	nonribbed	24
9 - 34	28	ribbed	24
35 - 42	28	ribbed	22
44 - 58	26	ribbed	22
60	26	ribbed	20
62 - 84	22	nonribbed	20

Note:
1. Standard inner liner for all duct is perforated galvanized for all outer shell material types.
2. Standard inner liner for all fittings is solid galvanized for all outer shell material types.
3. Other inner liner materials are available on special order. The inner liner of duct can be ordered as solid wall. The inner liner of fittings can be ordered as perforated wall.

McGill AirFlow Corporation

ACOUSTI-k27 DUCT

(Spiral lockseam)



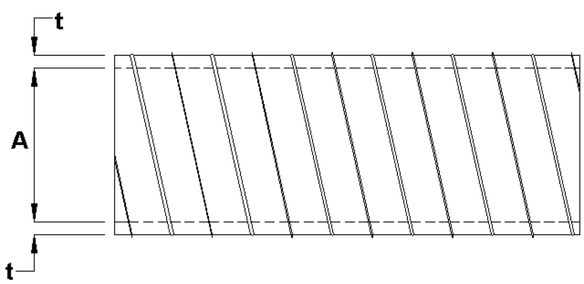
DESIGNATION:
KR(*)SD

DIMENSIONS:

Inner liner - 3-inch minimum
Outer shell - 84-inch maximum

UNI-RIB-k27 DUCT

(Spiral lockseam with rib)



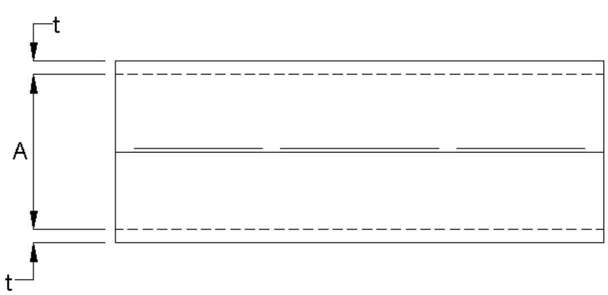
DESIGNATION:
KR(S or N)RD

DIMENSIONS:

Inner liner - 3-inch minimum
Outer shell - 9-inch minimum, 60-inch maximum

LONGITUDINAL SEAM-k27 DUCT[1]

(Solid welded longitudinal seam)



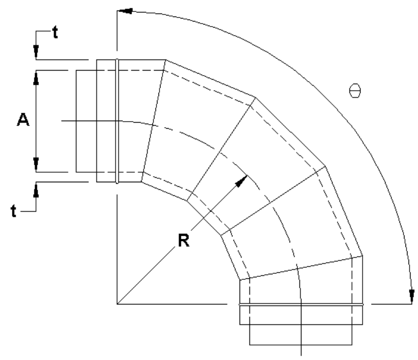
DESIGNATION:
KR(*)LD

DIMENSIONS:

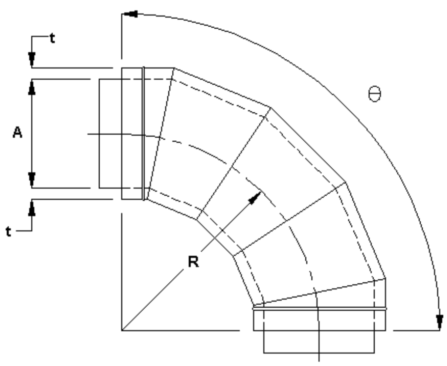
Inner liner - 3-inch minimum
Outer shell - 8-inch minimum, 90-inch maximum

[1] smaller or larger diameters available on special order.

GORED ELBOW



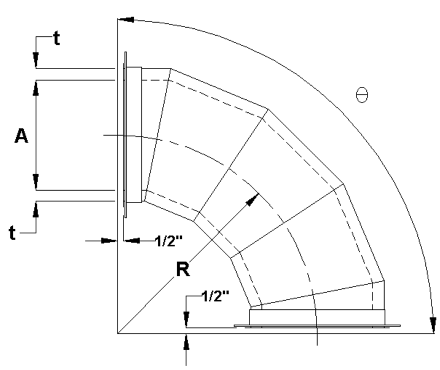
Outer Diameter ≤ 22-inches



Outer Diameter > 22-inches

GORED ELBOW

(With Van Stone connector ends)



Outer Diameter > 22-inches

Designation:
KR(*)E#-θ

Where:

θ	Number of gores
0 - 35° 36 - 71° 72 - 90°	2 3 5

For elbows where θ exceeds 90°, add one gore for each additional 18° or fraction thereof.

DIMENSIONS:

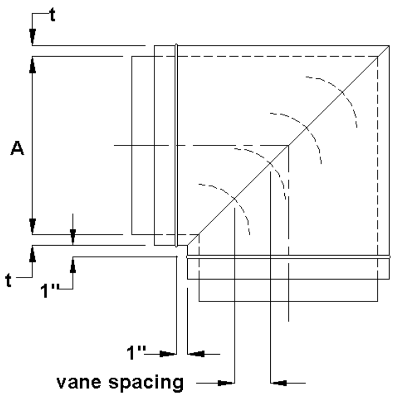
R = 1.5(A+2t)

Notes:

1. Nonstandard elbows with a different centerline radius and a different number of gores are available. Customer to specify face-to-face dimension when using applied connectors (see page 35).
2. Where possible, McGill AirFlow UNI-SEAM™ (standing seam) construction will be used on gored elbows (9-30 inches in outer diameter).
3. End gores are turned up ½-inch to create the flange on gored elbows with Van Stone connector ends when the outer diameter is greater than 22 inches. See the applied connector/Van Stone connector detail on page 36 for diameters less than or equal to 22 inches.
4. The outer shell for 1.5 centerline radius elbows may be made of pleated or die-stamped construction, depending on diameter and pressure class.

ELBOWS

MITERED 90° ELBOW



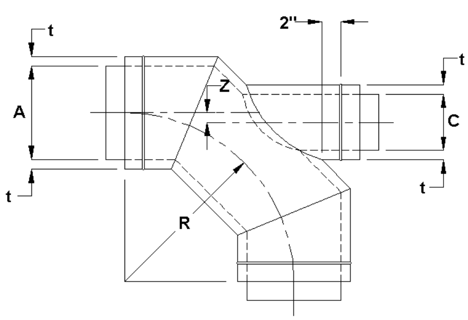
DESIGNATION:
KR(*)EMV-90
with turning vanes
(shown)
KR(*)EM-90
without turning vanes
(not shown)

DIMENSIONS:

A (inches)	Number of Vanes
3 - 9 ½	2
10 - 14 ½	3
15 - 19	4
20 - 60	5
over 60	12-inch maximum spacing

Note: Mitered 45° elbows (two gores) without vanes are also available. Designation is KR(*)EM-45.

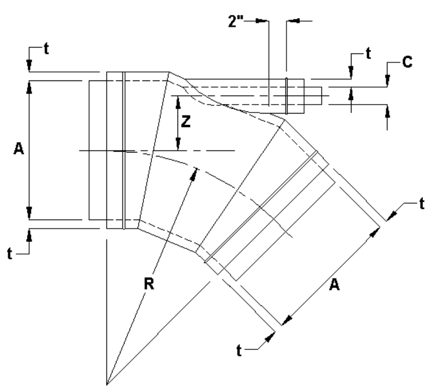
HEEL-TAPPED 90° ELBOW



DESIGNATION:
KR(*)ET3-90

DIMENSION
R = 1.5(A + 2t)
Z = 0.086(A + 2t)
Maximum C = A

HEEL-TAPPED 45° ELBOW



DESIGNATION:
KR(*)ET3-45

DIMENSION
R = 1.5(A + 2t)
Z = 0.348(A + 2t)
Maximum C = 0.3A

TEES

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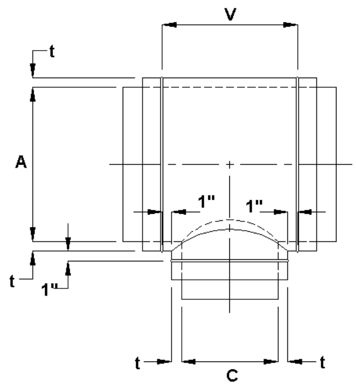
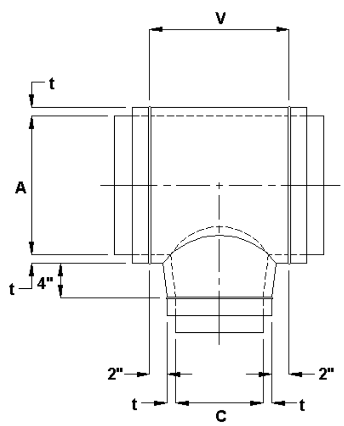
STRAIGHT TEE



DESIGNATION:
KR(*)T

DIMENSIONS:
V = C + 2t + 2
Maximum C = A

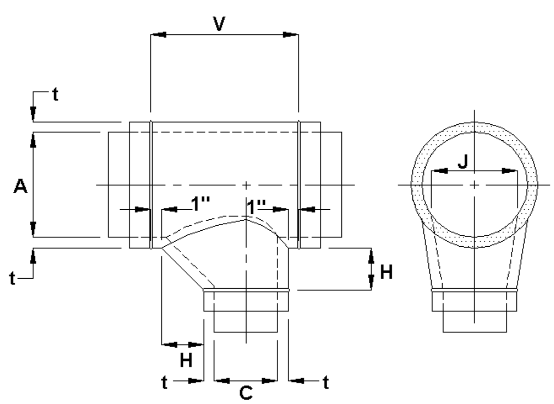
CONICAL TEE



DESIGNATION:
KR(*)TC

DIMENSIONS:
V = C + 2t + 4
Maximum C = A - 2

LO-LOSS™ TEE



DESIGNATION:
KR(*)TL

DIMENSIONS:
V = C + H + 2t + 2
J = C + 2 (for C ≤ A - 2)
J = C (for C > A - 2)
Maximum C = A

C (inches)	H (inches)
3 - 8	4
8 ½ - 14	7
14 ½ - 26	10
27 or larger	13

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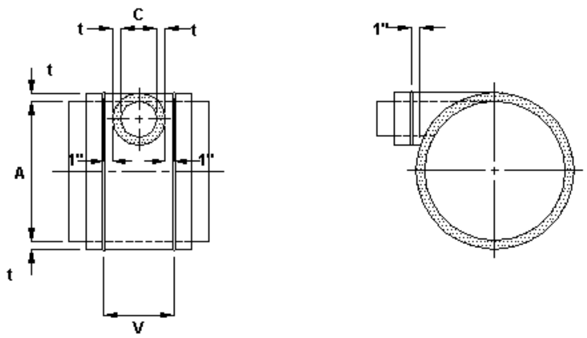
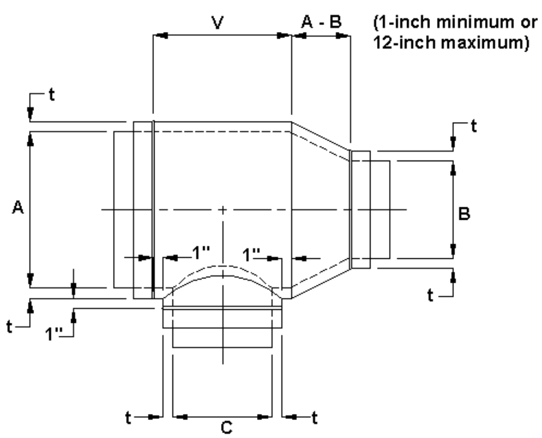
TANGENTIAL TEE



DESIGNATION:
KR(*)TT

DIMENSIONS:
V = C + 2t + 2

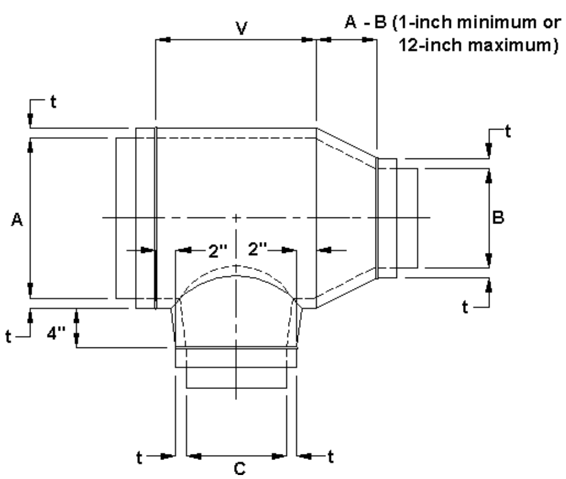
REDUCING STRAIGHT TEE



DESIGNATION:
KR(*)TR

DIMENSIONS:
V = C + 2t + 2
Maximum C = A

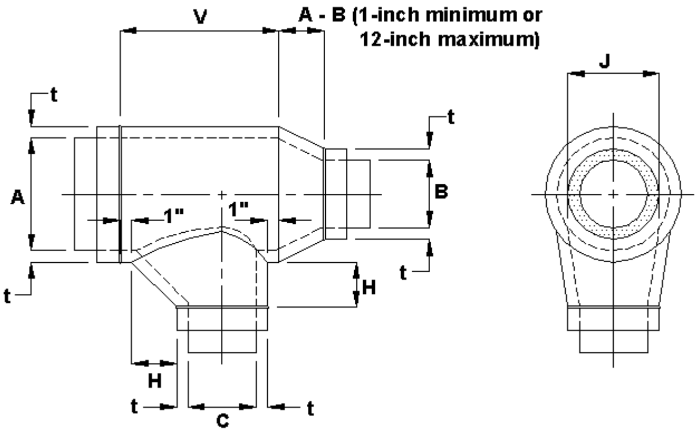
REDUCING CONICAL TEE



DESIGNATION:
KR(*)TCR

DIMENSIONS:
V = C + 2t + 4
Maximum C = A - 2

REDUCING LO-LOSS TEE

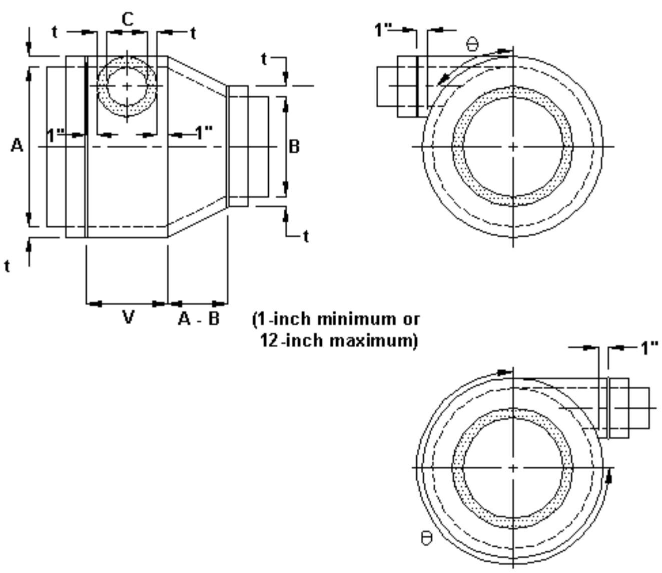


DESIGNATION:
KR(*)TLR

DIMENSIONS:
V = C + H + 2t + 2
J = C + 2 (for C ≤ A - 2)
J = C (for C > A - 2)
Maximum C = A

C + 2t (inches)	H (inches)
3 - 8	4
8 ½ - 14	7
14 ½ - 26	10
27 or larger	13

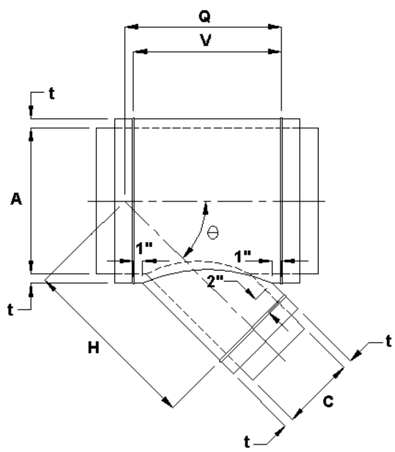
REDUCING TANGENTIAL TEE 90°



DESIGNATION:
KR(*)TTR
(-270 if θ ≠ 90°)

DIMENSIONS:
V = C + 2t + 2

STRAIGHT LATERAL



DESIGNATION:
KR(*)L
(-θ if θ ≠ 45°)

DIMENSIONS:

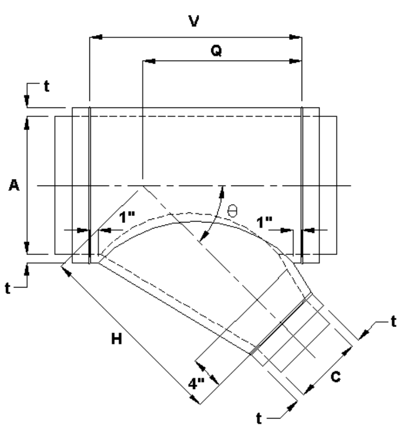
$$V = \frac{C + 2t}{\sin\theta} + 2$$

$$Q = \frac{A + 2t}{2\tan\theta} + \frac{C + 2t}{2\sin\theta} + 1$$

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

Maximum C = A

CONICAL LATERAL



DESIGNATION:
KR(*)LC
(-θ if θ ≠ 45°)

DIMENSIONS:

$$V = \frac{(C + 2t + 2)}{\sin\theta} + 2$$

$$Q = \frac{A + 2t}{2\tan\theta} + \frac{C + 2\alpha + 2t}{2\sin\theta} + 1$$

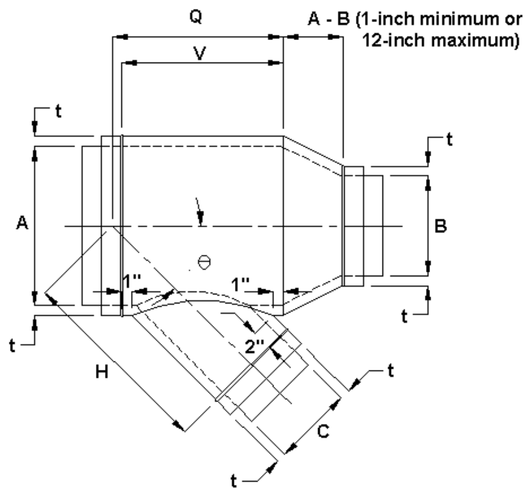
$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2\alpha + 2t}{2\tan\theta} + 4$$

$$\alpha = \frac{2}{\frac{(C + 2t + 2)}{4\tan\theta} + 2}$$

Maximum C = A - 3 for A≤ 10
A - 4 for 10<A≤42

A - 5 for A>42

REDUCING STRAIGHT LATERAL



DESIGNATION:
KR(*)LR
(-θ if θ ≠ 45°)

DIMENSIONS:

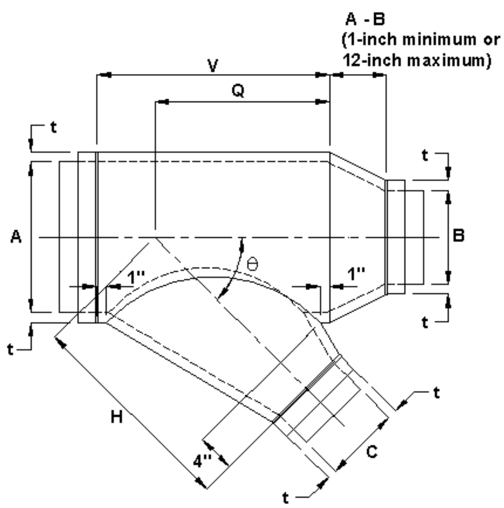
$$V = \frac{C + 2t}{\sin\theta} + 2$$

$$Q = \frac{A + 2t}{2\tan\theta} + \frac{C + 2t}{2\sin\theta} + 1$$

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

Maximum C = A

REDUCING CONICAL LATERAL



DESIGNATION:
KR(*)LCR
(-θ if θ ≠ 45°)

DIMENSIONS:

$$V = \frac{(C + 2t + 2)}{\sin\theta} + 2$$

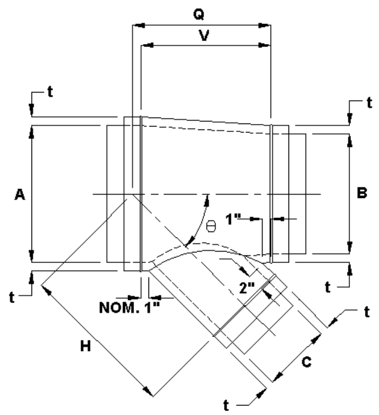
$$Q = \frac{A + 2t}{2\tan\theta} + \frac{C + 2\alpha + 2t}{2\sin\theta} + 1$$

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2\alpha + 2t}{2\tan\theta} + 4$$

$$\alpha = \frac{2}{\frac{(C + 2t + 2)}{4\tan\theta} + 2}$$

Maximum C = A - 3 for A≤ 10
A - 4 for 10<A≤42
A - 5 for A>42

TAPERED BODY LATERAL



DESIGNATION:
KR(*)LP
(-θ if θ ≠ 45°)

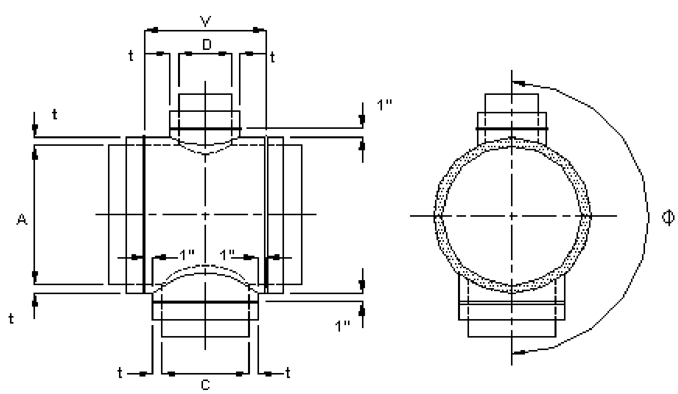
DIMENSIONS:

$$V = \frac{C}{\sin\theta} - \frac{A - B}{2\tan\theta} + 2$$

$$Q = \frac{A - B}{2V\tan\theta} + \frac{B + 2t}{2V\tan\theta} + \frac{C + 2t}{2\sin\theta} + 1$$

$$H = \frac{A - B}{2V\tan\theta} + \frac{B + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

STRAIGHT 90° CROSS



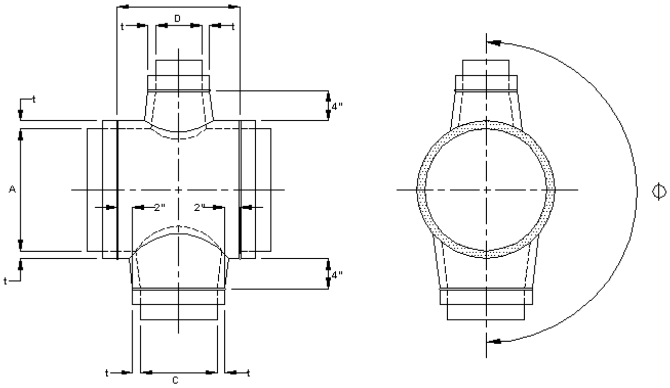
DESIGNATION:
KR(*)TX
(-φ if φ ≠ 180°)

DIMENSIONS:

V = C + 2t + 2

Maximum C or D = A

CONICAL 90° CROSS



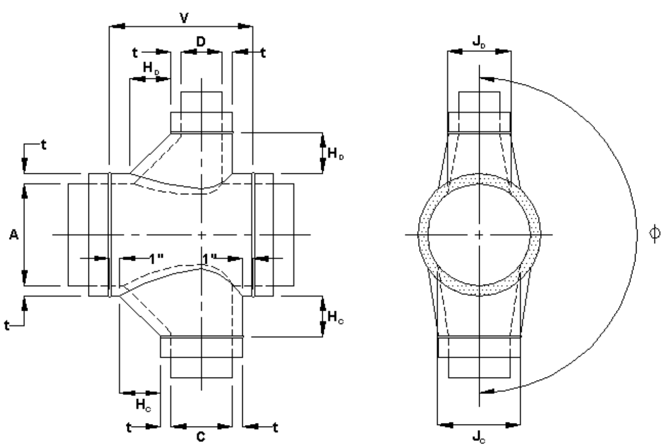
DESIGNATION:
KR(*)TXC
(-φ if φ ≠ 180°)

DIMENSIONS:

$V = C + 2t + 4$

Maximum C or D = A - 2

LO-LOSS 90° CROSS



DESIGNATION:
KR(*)TXL
(-φ if φ ≠ 180°)

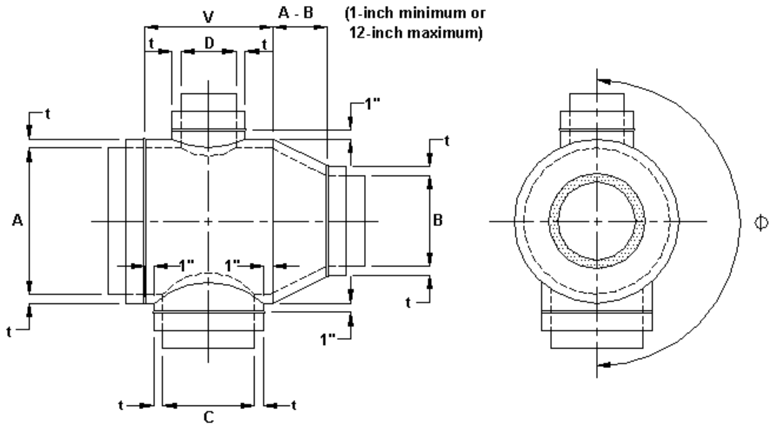
DIMENSIONS:

$V = C + H_C + 2t + 2$

Note: To determine J_C or J_D dimension and maximum C or D, refer to LO-LOSS tee drawing.

C or D (inches)	H_C or H_D (inches)
3 - 8	4
8 ½ - 14	7
14 ½ - 26	10
27 or larger	13

REDUCING STRAIGHT 90° CROSS



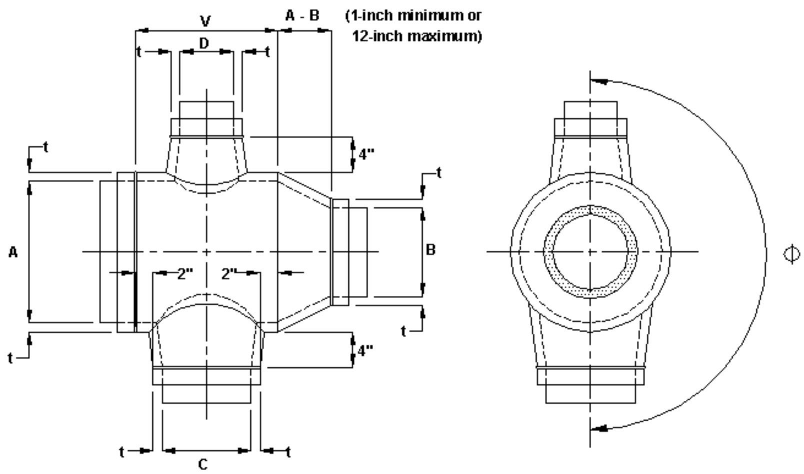
DESIGNATION:
KR(*)TXR
(φ if φ ≠ 180°)

DIMENSIONS:

V = C + 2t + 2

Maximum C or D = A

REDUCING CONICAL 90° CROSS



DESIGNATION:
KR(*)TXCR
(-φ if φ ≠ 180°)

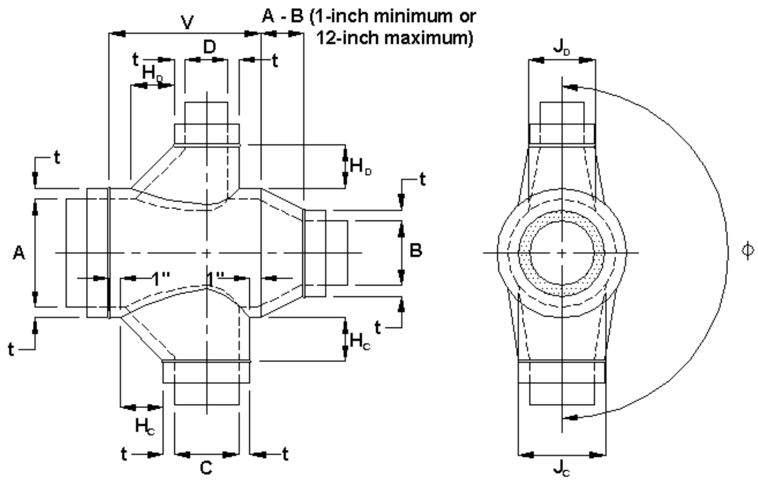
DIMENSIONS:

V = C + 2t + 4

Maximum C or D = A - 2

REDUCING LO-LOSS 90° CROSS

DESIGNATION:
KR(*)TXLR
(-φ if φ ≠ 180°)



DIMENSIONS:

V = C + H_C + 2

Note: To determine J_C + J_D dimension and maximum C or D, refer to LO-LOSS tee drawing.

C or D (inches)	H_C and H_D (inches)
3 - 8	4
8 ½ - 14	7
14 ½ - 26	10
27 or larger	13

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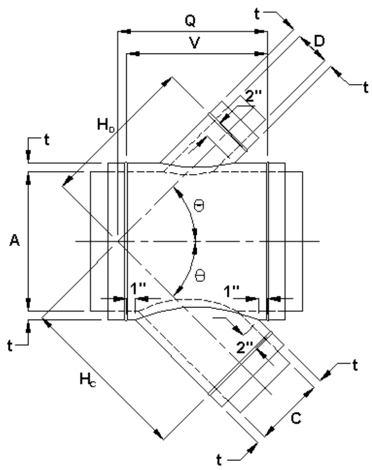
LATERAL CROSS



DESIGNATION:
KR(*)LX
(-φ if φ ≠ 180°,
-θ if θ ≠ 45°)

DIMENSIONS:

$$V = \frac{C + 2t}{\sin\theta} + 2$$

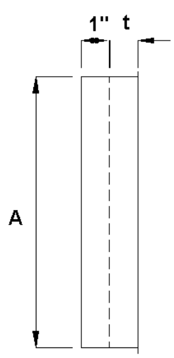
$$Q = \frac{A + 2t}{2\tan\theta} + \frac{C + 2t}{2\sin\theta} + 1$$

$$H_C = \frac{A + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

$$H_D = \frac{A + 2t}{2\sin\theta} + \frac{D + 2t}{2\tan\theta} + 2$$

Maximum C or D = A

END CAP



DESIGNATION:
KR(*)EC (for duct)
KR(*)ECF (for fittings)

DIMENSIONS:

A is the outer shell dimension

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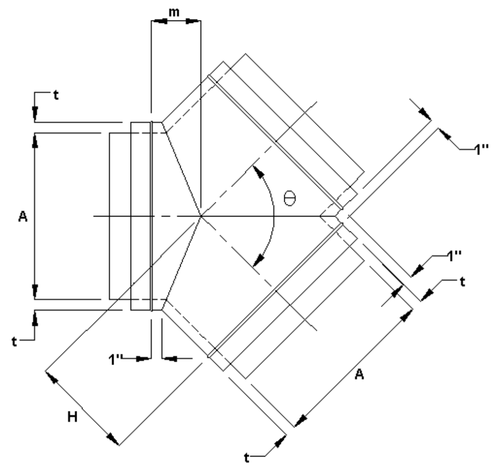
Y-BRANCH



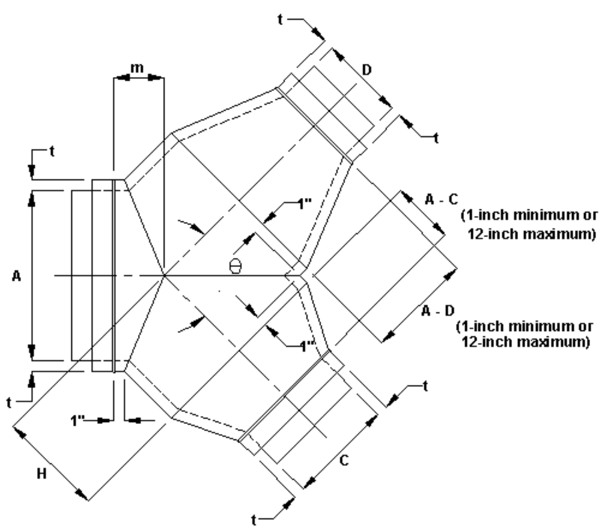
DESIGNATION:
KR(*)Y
(-θ if θ ≠ 90°)

DIMENSIONS:

$$H = \frac{A + 2t}{2\tan(\theta / 2)} + 1$$

$$m = \left(\frac{A + 2t}{2}\right)\tan(\theta / 4)$$

REDUCING Y-BRANCH



DESIGNATION:
KR(*)YR
(-θ if θ ≠ 90°)

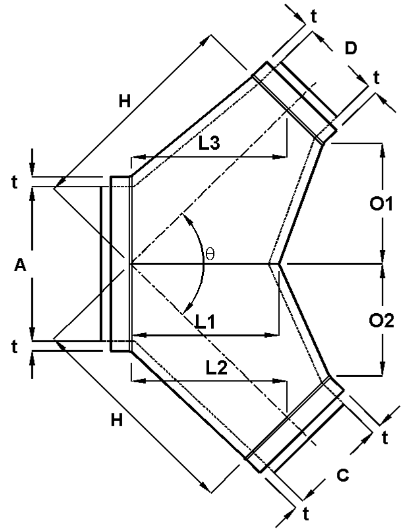
DIMENSIONS:

$$H = \frac{A + 2t}{2\tan(\theta / 2)} + 1$$

$$m = \left(\frac{A + 2t}{2}\right)\tan(\theta / 4)$$

Maximum C or D = A

TAPERED Y-BRANCH



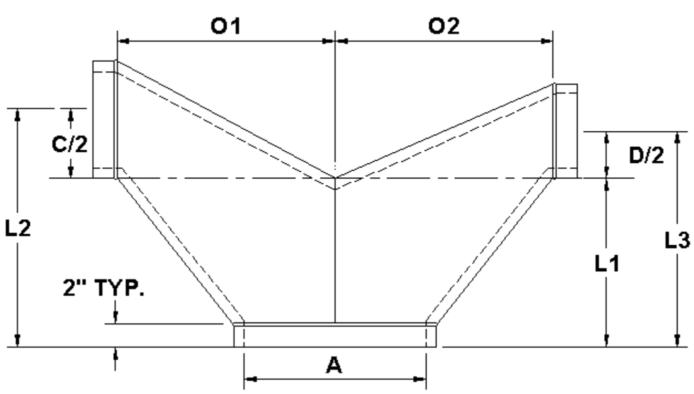
DESIGNATION:
KR(*)YP
(-θ if θ ≠ 90°)

DIMENSIONS:
H = 1.25(A + 2t)

L1 = A + 2t
L2 = [1.25(L1) x cos(θ/2)] + [C/2 x sin(θ/2)]
L3 = [1.25(L1) x cos(θ/2)] + [D/2 x sin(θ/2)]
O1 = [1.25(L1) x sin (θ/2)] + [C/2 x sin(θ/2)]
O2 = [1.25(L1) x sin (θ/2)] + [D/2 x sin(θ/2)]

Maximum C or D = A

VEE FITTING



DESIGNATION:
KR(*)VE
KR(*)VER
reducing (shown)

DIMENSIONS:

L1 = A
O1 = O2 = A

$$L2 = A + \frac{C + 2t}{2}$$

$$L3 = A + \frac{D + 2t}{2}$$

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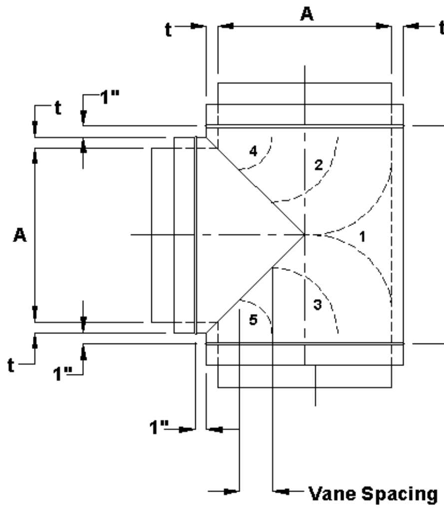
BULLHEAD TEE



DESIGNATION:

KR(*)TBV
with turning vanes
(shown)

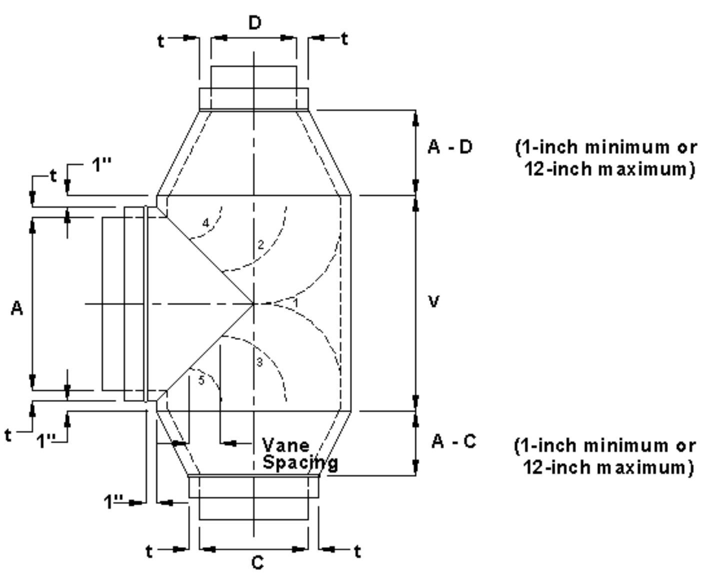
KR(*)TB
without turning vanes
(not shown)

DIMENSIONS:

V = A + 2t + 2

A (inches)	Number of Vanes
3 - 6 ½ 7 - 9 ½ 10 - 60 over 60	1 3 5 12-inch maximum spacing

REDUCING BULLHEAD TEE



DESIGNATION:

KR(*)TBVR
with turning vanes
(shown)

KR(*)TBR
without turning vanes
(not shown)

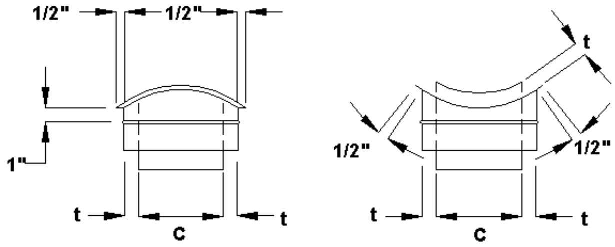
DIMENSIONS:

V = A + 2t + 2

A (inches)	Number of Vanes
3 - 6 ½ 7 - 9 ½ 10 - 60 over 60	1 3 5 12-inch maximum spacing

TAPS

CONTOURED FLANGED STRAIGHT TEE TAP

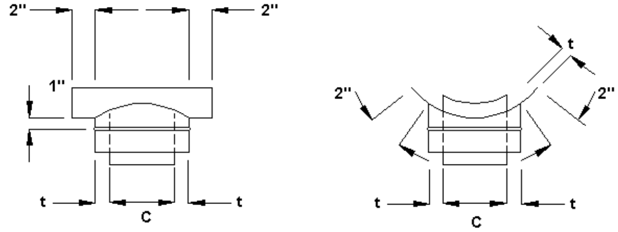


DESIGNATION:
KR(*)PT

DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A

SADDLE STRAIGHT TEE TAP

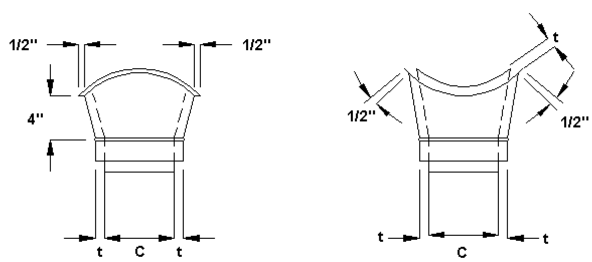


DESIGNATION:
KR(*)PTS

DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A

CONTOURED FLANGED CONICAL TAP

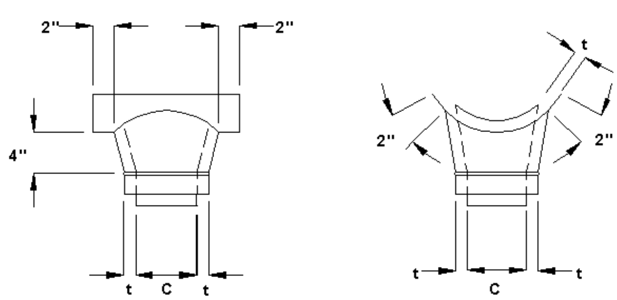


DESIGNATION:
KR(*)PTC

DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A - 2

SADDLE CONICAL TEE TAP

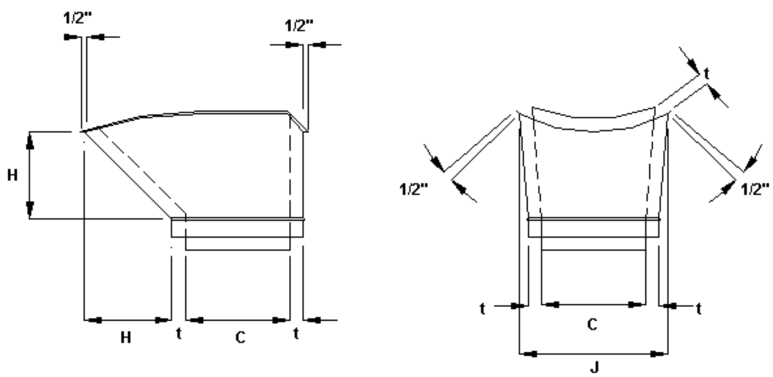


DESIGNATION:
KR(*)PTCS

DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A - 2

CONTOURED FLANGED LO-LOSS TEE TAP



DESIGNATION:
KR(*)PTL

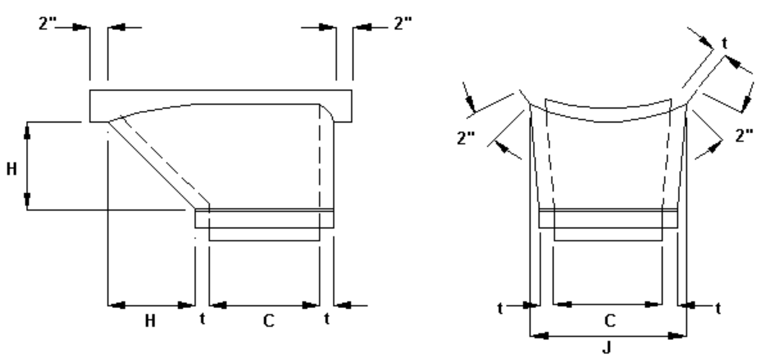
DIMENSIONS:
Specify duct size that tap will be attached to as A.

$J = C + 2t + 2$ (for $C \le A - 2$)
$J = C + 2t$ (for $C > A - 2$)

Maximum $C = A$

C (inches)	H (inches)
3 - 8	4
9 - 14	7
15 - 26	10
27 or larger	13

SADDLE LO-LOSS TEE TAP



DESIGNATION:
KR(*)PTLS

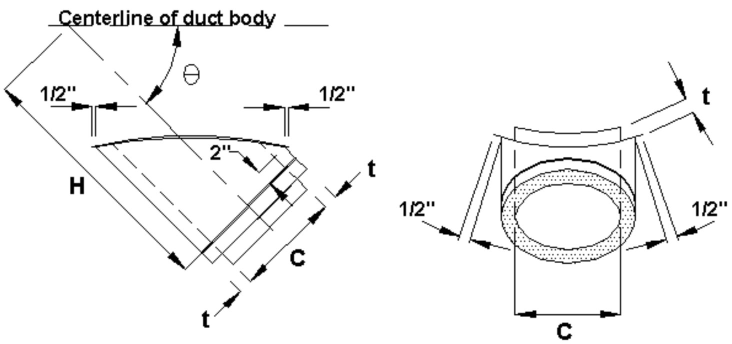
DIMENSIONS:
Specify duct size that tap will be attached to as A.

$J = C + 2t + 2$ (for $C \le A - 2$)
$J = C + 2t$ (for $C > A - 2$)

Maximum $C = A$

C (inches)	H (inches)
3 - 8	4
9 - 14	7
15 - 26	10
27 or larger	13

CONTOURED FLANGED LATERAL TAP



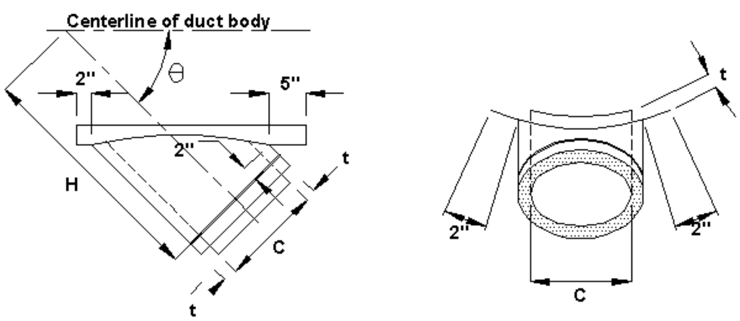
DESIGNATION:
KR(*)PL
(-θ if θ ≠ 45°)

DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

SADDLE LATERAL TAP



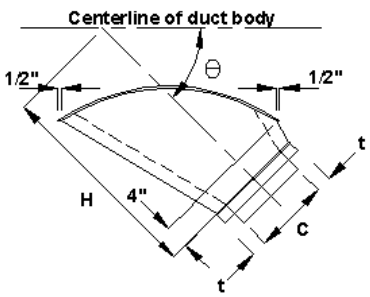
DESIGNATION:
KR(*)PLS
(-θ if θ ≠ 45°)

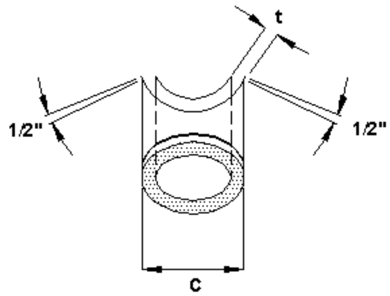
DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2t}{2\tan\theta} + 2$$

CONTOURED FLANGED CONICAL LATERAL TAP





DESIGNATION:
KR(*)PLC
(-θ if θ ≠ 45°)
(for θ ≥ 30°)

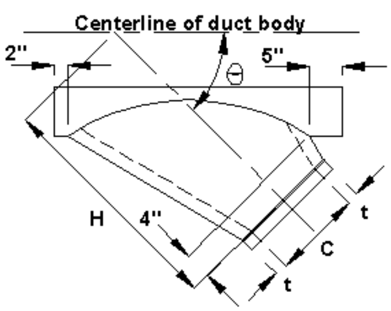
DIMENSIONS:
Specify duct size that tap will be attached to as A.

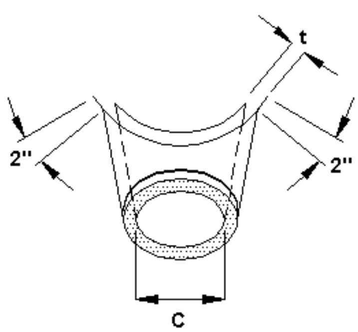
Maximum C = A - 3 for A ≤10
A - 4 for 10 < A ≤42
A - 5 for A > 42

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2\alpha + 2t}{2\tan\theta} + 4$$

$$\alpha = \frac{2}{\frac{(C + 2t + 2)}{4\tan\theta} + 2}$$

SADDLE CONICAL LATERAL TAP





DESIGNATION:
KR(*)PLCS
(-θ if θ ≠ 45°)
(for θ ≥ 30°)

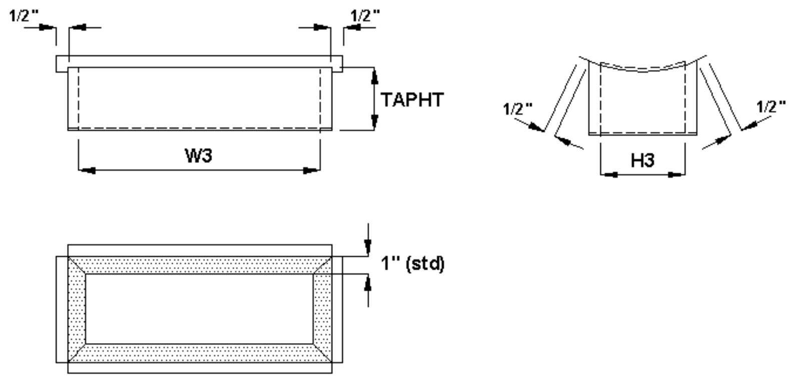
DIMENSIONS:
Specify duct size that tap will be attached to as A.

Maximum C = A - 3 for A ≤10
A - 4 for 10 < A ≤42
A - 5 for A > 42

$$H = \frac{A + 2t}{2\sin\theta} + \frac{C + 2\alpha + 2t}{2\tan\theta} + 4$$

$$\alpha = \frac{2}{\frac{(C + 2t + 2)}{4\tan\theta} + 2}$$

SADDLE RECTANGULAR TAP

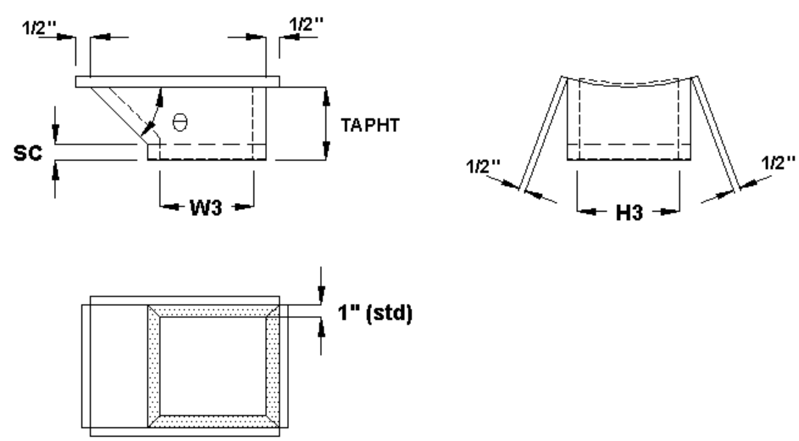


DESIGNATION:
KR(*)PTA
(Flange-in shown on outer shell)

DIMENSIONS:
Specify tap size (W3 x H3) and duct size (A) that tap will be attached to and indicate end detail, i.e., flange-in, flange-out, or raw. Provide sketch of orientation if different than noted.

Default: TAPHT = 3 inches

SADDLE RECTANGULAR TAP



DESIGNATION:
KR(*)PTLA
(Flange-in shown on outer shell)

DIMENSIONS:
Specify tap size (W3 x H3) and duct size (A) that tap will be attached to and indicate end detail, i.e., flange-in, flange-out or raw. Provide sketch of orientation if different than noted.

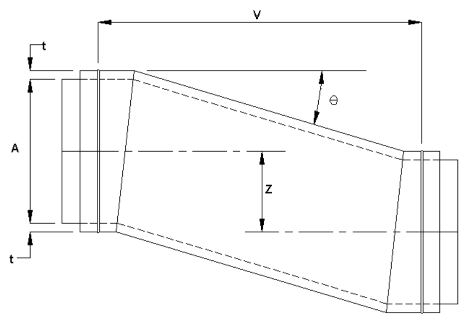
Default: TAPHT = 6 inches
SC = 2 inches
θ = 45°

Specify SC if TAPHT is other than 6 inches

OFFSET and SQUARE-TO-ROUND

McGill AirFlow Corporation

OFFSET



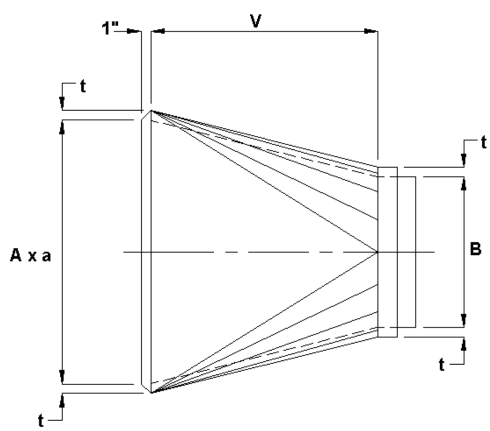
DESIGNATION:
KR(*)Z

DIMENSIONS:
V = 2A + 4t

Z = Must be specified

Note: Z should not exceed 0.75A or θ>60°. If larger, use fabricated elbows and a straight length of duct.

SQUARE-TO-ROUND



DESIGNATION:
KR(*)QR

DIMENSIONS:
V = 12, 24, 36, or 48 inches

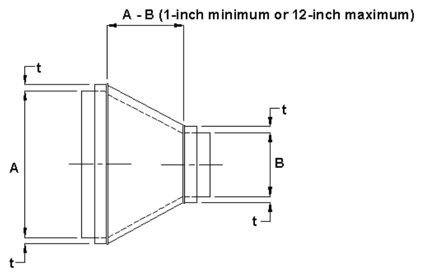
A = Major axis of rectangular side
a = Minor axis of rectangular side

REDUCERS and COUPLINGS

McGill AirFlow Corporation

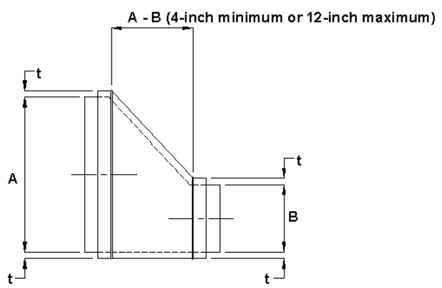
CONCENTRIC REDUCER

DESIGNATION:
KR(*)R



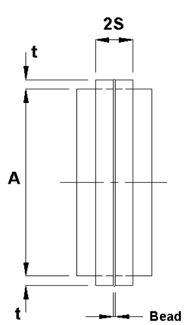
ECCENTRIC REDUCER

DESIGNATION:
KR(*)RE



DUCT-TO-DUCT COUPLING

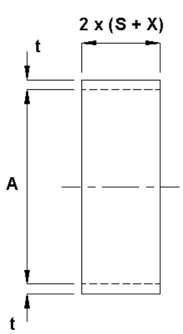
DESIGNATION:
KR(*)C



A + 2t (inches)	Bead (inches)
5 - 23	1/4
over 23	5/8

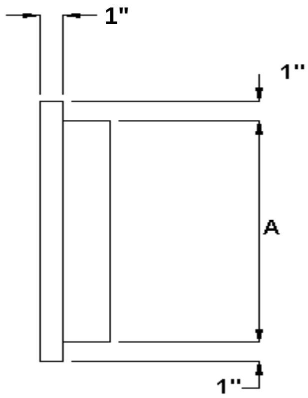
FITTING-TO-FITTING COUPLING

DESIGNATION:
KR(*)CF

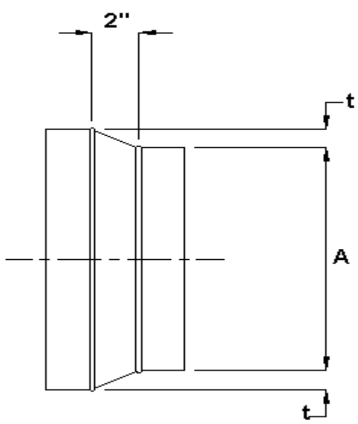


SINGLE-WALL INSULATION END

(Without inner collar)



TYPE A



TYPE B

DESIGNATION:
SRSIE(DD, DF, FD, or FF)-#

Where:
DD = double-wall duct to single-wall duct
DF = double-wall duct to single-wall fitting
FD = double-wall fitting to single-wall duct
FF = double-wall fitting to single-wall fitting

Explanation:

1 = Loose insulation end
2 = Insulation end is tack welded and bonded to double-wall duct or fitting
3 = Insulation end is solid welded to outer wall of double-wall duct or fitting

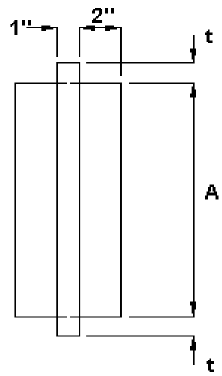
Example designation:
SRSIEDD-1

Notes:

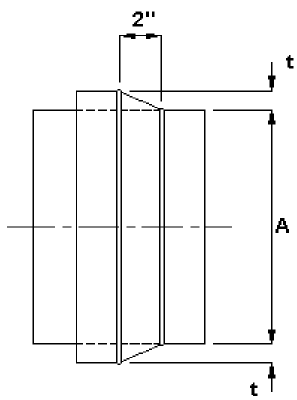
1. Type A insulation ends are used when all of the following conditions are met: (a) material is galvanized steel, (b) t = 1 inch, and (c) A is in the range of 3 through 36 inches excepting ½ inch sizes (i.e., 4 ½", 5 ½", ..., 14 ½")
2. Type B insulation ends are used for all other cases.

SINGLE-WALL INSULATION END

(With inner collar)



TYPE A



TYPE B

DESIGNATION:
SRSIE(DD, DF, FD, or FF)-4

Where:
DD = double-wall duct to single-wall duct
DF = double-wall duct to single-wall fitting
FD = double-wall fitting to single-wall duct
FF = double-wall fitting to single-wall fitting

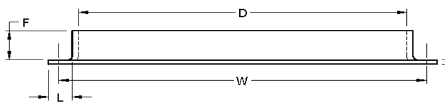
Notes:

1. Type A insulation ends are used when all of the following conditions are met: (a) material is galvanized steel, (b) t = 1 inch, and (c) A is in the range of 3 through 36 inches excepting ½ inch sizes (i.e., 4 ½", 5 ½", ..., 14 ½")
2. Type B insulation ends are used for all other cases.

ANGLE RING

McGill AirFlow Corporation

GALVANIZED UNI-RING™ ANGLE RING



DESIGNATION:
SFUR**

** = Diameter (e.g. 06, 14, etc.)

DIMENSIONS:

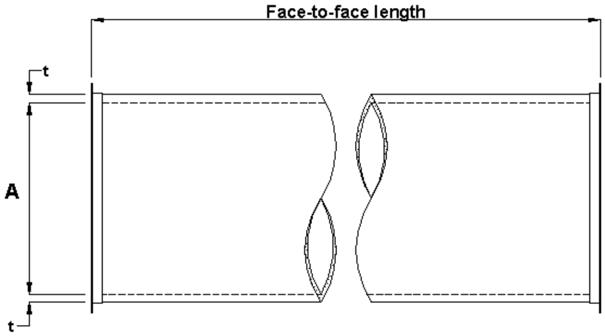
Nominal diameter = 6 inch through 60 inch

Bolt Hole Dimensions: 6"-15" duct diameter (Holes 5/16" round)
16"-60" duct diameter (Holes 5/8" x 7/16" oval)

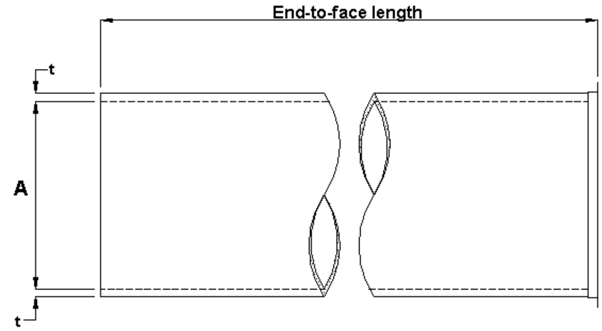
D Nominal Diameter (inches)	W Bolt Diameter (inches)	Number of Bolts	L Nominal Leg Height (inches)	F Nominal Flat Length (inches)	t Nominal Thickness (inches)	Nominal Weight Ring Only (pounds)	D Nominal Diameter (inches)
6.0	7.375	6	1.0625	0.9375	0.078	1.00	6.0
7.0	8.375	6	1.0625	0.9375	0.078	1.20	7.0
8.0	9.375	6	1.0625	0.9375	0.078	1.30	8.0
8.5	9.875	6	1.0625	0.9375	0.078	1.40	8.5
9.0	10.375	6	1.0625	0.9375	0.078	1.50	9.0
9.5	10.875	6	1.0625	0.9375	0.078	1.60	9.5
10.0	11.375	6	1.2500	1.1875	0.078	1.70	10.0
10.5	11.875	6	1.2500	1.1875	0.078	1.70	10.5
11.0	12.375	6	1.2500	1.1875	0.078	1.80	11.0
11.5	12.875	6	1.2500	1.1875	0.078	1.90	11.5
12.0	13.375	8	1.2500	1.1875	0.078	2.00	12.0
12.5	13.875	8	1.2500	1.1875	0.078	2.10	12.5
13.0	14.375	8	1.2500	1.1875	0.078	2.10	13.0
13.5	14.875	8	1.2500	1.1875	0.078	2.20	13.5
14.0	15.375	8	1.2500	1.1875	0.078	2.30	14.0
14.5	15.875	8	1.2500	1.1875	0.078	2.40	14.5
15.0	16.375	8	1.2500	1.1875	0.078	2.50	15.0
16.0	17.375	8	1.2500	1.1875	0.078	2.60	16.0
17.0	18.375	8	1.2500	1.1875	0.078	2.80	17.0
18.0	19.375	8	1.2500	1.1875	0.078	3.00	18.0
19.0	20.375	12	1.2500	1.1875	0.078	3.10	19.0
20.0	21.375	12	1.2500	1.1875	0.078	3.30	20.0
21.0	22.375	12	1.2500	1.1875	0.078	3.40	21.0
22.0	23.375	12	1.2500	1.1875	0.078	3.60	22.0
23.0	24.375	12	1.2500	1.1875	0.078	3.80	23.0
24.0	25.375	12	1.2500	1.1875	0.078	3.90	24.0
25.0	26.375	16	1.2500	1.1875	0.108	5.70	25.0
26.0	27.375	16	1.2500	1.1875	0.108	5.90	26.0
27.0	28.375	16	1.2500	1.1875	0.108	6.10	27.0
28.0	29.375	16	1.2500	1.1875	0.108	6.30	28.0
29.0	30.375	16	1.2500	1.1875	0.108	6.60	29.0
30.0	31.375	16	1.2500	1.1875	0.108	6.80	30.0
31.0	32.375	16	1.2500	1.1875	0.108	7.00	31.0
32.0	33.375	16	1.2500	1.1875	0.108	7.30	32.0
33.0	34.375	16	1.2500	1.1875	0.108	7.50	33.0
34.0	35.375	16	1.2500	1.1875	0.108	7.70	34.0
35.0	36.375	16	1.2500	1.1875	0.108	7.90	35.0
36.0	37.375	16	1.2500	1.1875	0.108	8.10	36.0
37.0	38.375	24	1.2500	1.1875	0.108	8.40	37.0
38.0	39.375	24	1.2500	1.1875	0.108	8.60	38.0
39.0	40.375	24	1.2500	1.1875	0.108	8.80	39.0
40.0	41.375	24	1.2500	1.1875	0.108	9.00	40.0
41.0	42.375	24	1.2500	1.1875	0.108	9.30	41.0
42.0	43.375	24	1.2500	1.1875	0.108	9.50	42.0
43.0	44.375	24	1.2500	1.1875	0.138	12.40	43.0
44.0	45.375	24	1.2500	1.1875	0.138	12.70	44.0
45.0	46.375	24	1.2500	1.1875	0.138	13.00	45.0
46.0	47.375	24	1.2500	1.1875	0.138	13.30	46.0
47.0	48.375	24	1.2500	1.1875	0.138	13.60	47.0
48.0	49.375	24	1.2500	1.1875	0.138	13.90	48.0
49.0	50.375	24	1.2500	1.1875	0.138	14.10	49.0
50.0	51.375	24	1.2500	1.1875	0.138	14.40	50.0
51.0	52.375	24	1.2500	1.1875	0.138	14.80	51.0
52.0	53.375	24	1.2500	1.1875	0.138	15.00	52.0
53.0	54.375	24	1.2500	1.1875	0.138	15.30	53.0
54.0	55.375	24	1.2500	1.1875	0.138	15.60	54.0
55.0	56.375	24	1.2500	1.1875	0.138	15.90	55.0
56.0	57.375	24	1.2500	1.1875	0.138	16.20	56.0
57.0	58.375	24	1.2500	1.1875	0.138	16.50	57.0
58.0	59.375	24	1.2500	1.1875	0.138	16.80	58.0
59.0	60.375	24	1.2500	1.1875	0.138	17.00	59.0
60.0	61.375	24	1.2500	1.1875	0.138	17.30	60.0

CONNECTORS

APPLIED DUCT CONNECTOR



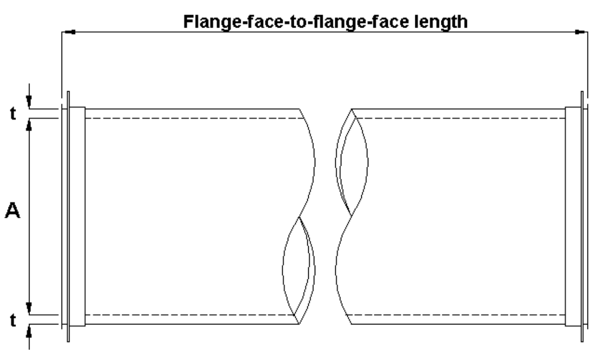
Applied Connector at Both Ends



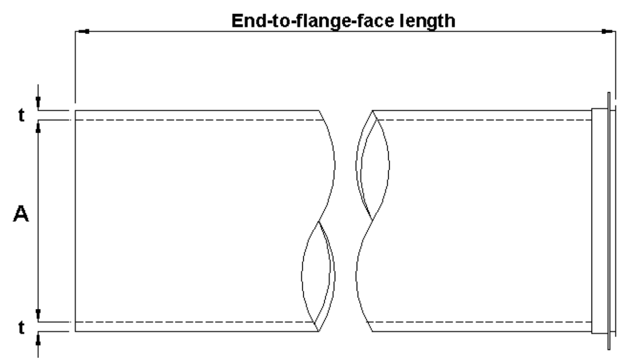
Applied Connector at One End

Note: Customer-specified duct length shall be the face-to-face or end-to-face dimension. Standard coil widths are 60 and 72-inch. When either of these lengths are requested on longitudinal seam duct with an angle ring, the ring is pulled ½ inch for welding, and the overall length will finish ½ inch longer. For example, a 60-inch length of longitudinal seam duct will finish 61-inches if iron angle rings are welded onto both ends. On all other applied connectors, the overall length does not change.

VAN STONE DUCT CONNECTOR



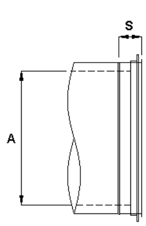
Van Stone Connector at Both Ends



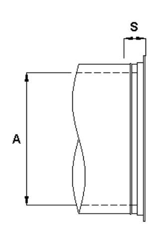
Van Stone Conector at One End

Notes:
1. Customer-specified duct length shall be the flange-face-to-flange-face or end-to-flange-face length.
2. Avoid Van Stone assemblies on spiral duct.
3. Use at least one end-to-face duct section for field adjustment.
4. Standard coils widths are 60 and 72-inch. When either of these lengths are requested with a Van Stone end on longitudinal seam duct, the length will be reduced ½-inch for each end which requires the Van Stone. For example, a 60-inch length of longitudinal seam duct with Van Stone connectors on both ends will finish 59 inches.

APPLIED AND VAN STONE FITTINGS CONNECTORS



Van Stone Connector on Fitting End

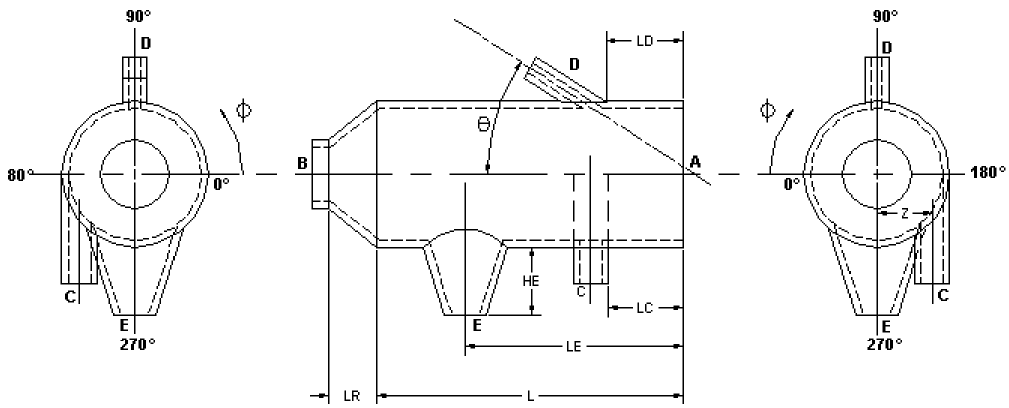


Applied Connector on Fitting End

Type of Connector	Outer Shell (inches)	S (inches)
Van Stone	5 - 9	1 ½
Van Stone	9 ½ - 72	3 ½
Applied	5 - 90	Specify face-to-face distance

Notes:
1. Customer to specify face-to-face dimensions for nonstandard fittings construction (i.e., nonstandard centerline radius on elbow or tap and body extensions on divided-flow fittings).
2. The bead is shown for reference only. Fittings requiring connectors are pipe sized and do not require a bead.
3. For gored elbows > 22 inches, refer to page 11 showing gored elbows.

STANDARD ASSEMBLY DRAWING



Looking through B:

A	=	Inner diameter large end
B	=	Inner diameter small end (if reducing)
C	=	Inner diameter of first tap
D	=	Inner diameter of second tap
E	=	Inner diameter of third tap
H_E	=	Tap height of third tap (only when nonstandard height)
L	=	Length of duct
L_C	=	Dimension to first tap
L_D	=	Dimension to second tap
L_E	=	Dimension to third tap (conical)
L_R	=	Reducer length
Z_C	=	Offset position of first tap
Z_D	=	Offset position of second tap
Z_E	=	Offset position of third tap
θ	=	Location (in degrees) of lateral tap
φ_C	=	Location (in degrees) of first tap
φ_D	=	Location (in degrees) of second tap
φ_E	=	Location (in degrees) of third tap

Looking through A:

φ_C	=	270°	Z_C	=	X, -X
φ_D	=	90°	Z_D	=	0
φ_E	=	270°	Z_E	=	0

Notes:

1. X = specified distance
2. The end view is located to the right of the plan view if looking through the A end.
3. The end view is located to the left of the plan view if looking through the B end.
4. All taps, except for conical taps, are measured from the right hand side to the first end of the tap. Conical taps are measured from the right hand side (e.g. L_E) from the centerline of the tap.

The products depicted in these dimension sheets were current at the time of publication. As a quality conscious manufacturer, McGill AirFlow Corporation is constantly seeking ways to improve its products to better serve its customers. Therefore, all designs, specifications, and product features are subject to change without notice.

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