SILVER SHEET ENTERPRISES, INC.

Spiral Pipe & Fittings Construction Standards

SUBMITTAL DATA

SSEI GALVANIZED PIPE & FITTINGS

SPIRAL PIPE AND FITTING GAGES FOR POSITIVE PRESSURES

MAXIMUM +2" W.G.			MAXIMUM +4" W.G.			MAXIMUM +10" W.G.		
SIZE	PIPE GA.	FITTING GA.	SIZE	PIPE GA.	FITTING GA.	SIZE	PIPE GA.	FITTING GA.
3" - 14"	28	26	3"- 12"	28	26	3" - 14"	26	20
15"- 26"	26	24	13"- 16"	26	24	15"- 26"	24	20
28"- 36"	24	22	17"- 26"	24	22	28"- 36"	22	20
38"- 50"	22	20	28"- 36"	22	20	38"- 50"	20	20
52"- 60"	20	18	38"- 50"	20	20	52"- 60"	18	18
62"- 84"	18	16	52"- 60"	18	18	62"- 84"	18	16

LOW PRESSURE

MEDIUM PRESSURE

PIPE AND FITTINGS are fabricated from G-90 galvanized steel sheet meeting ASTM A-653 standards (formerly A-527).

SPIRAL PIPE is roll formed, continuous interlocked pipe which combines the economics of light metal and a spiral lockseam construction that assures maximum strength and rigidity. The lockseam combines four plys of metal to form a continuous interlocking rib on the outside which permits the fabrication of long lengths of pipe with a smooth interior. All pipe is available up to 20' lengths.

FITTINGS - Construction features spot welds with all joints shop sealed. Optional construction features solid welds with weld area coated for protection when specified.

ELBOWS - Die formed elbows in both 90 and 45 degree are used for 3" thru 12" sizes. Elbows above 12" are gored type with the number of gores in accordance with SMACNA 1995. All elbows have standard 1.5 x diameter center line radius.

ALL CONSTRUCTION STANDARDS IN ACCORDANCE WITH SMACNA AND ASHRAE STANDARDS.

JOB HONDA - HPPG - 89KI EXPANSION

LOCATION TALLAPOOSA, GA

ARCHITECT _____ JOB NO. _____

ENGINEER _____ REPRESENTATIVE _____

CONTRACTOR ADDISON SMITH DATE 01/07/2014

Spinfinity
Post Office Box 209 • Pacific, WA 98047
877.833.4224 • www.spinfinity.net

COMPONENTS

AccuFlange

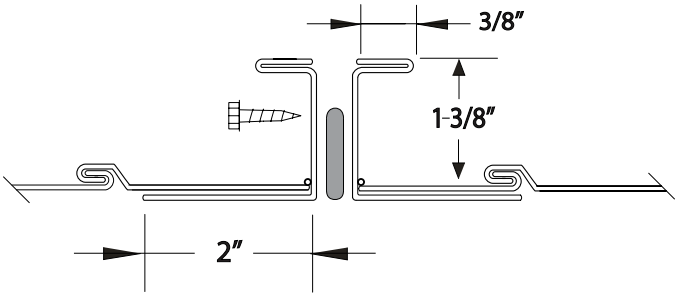
FOR SPIRAL 26" DIA AND LARGER
24" AND SMALLER = SLIP FIT COUPLING

Round AF

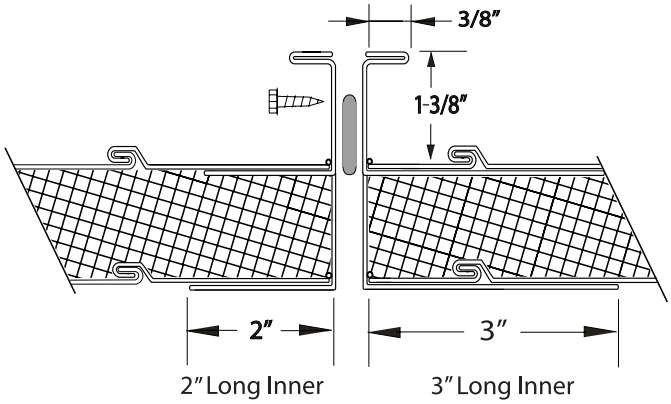
Oval AF

ITEM CODE	WALL CODE	A or A_2 (Oval Minor)	MATERIAL	GAUGE	SEAM	PRESSURE CLASS
AF	SW, 1DW, 2DW, 3DW	6″–28″ (Even & Odd Sizes)*	Galvanized, Galvanseal, 304 SS, 316 SS, Aluminum & PVC Coated	18	SWB	+10″W.G. to -10″W.G. SMACNA HVAC D.C.S.
		30″–58″ (Even Sizes)		18		
		60″–74″ (Even Sizes)		16		
		76″–96″ (Even Sizes)		14		

* 6″–14″ stainless and aluminum have a small face.



Singlewall (SW)



Doublewall
(Specify 1DW, 2DW or 3DW)

AccuFlange™

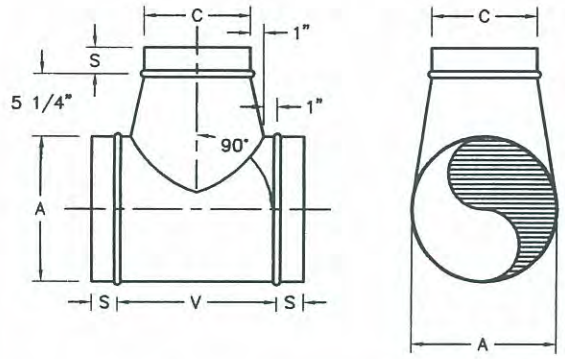
U.S. Patent No. 5,983,496

The patented AccuFlange™ connecting system, installed and sealed per Spinfinity's recommendations, is suitable for use on all systems across a range of internal duct pressures from 10″ W.G. positive to 10″ W.G. negative.

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Conical Tees

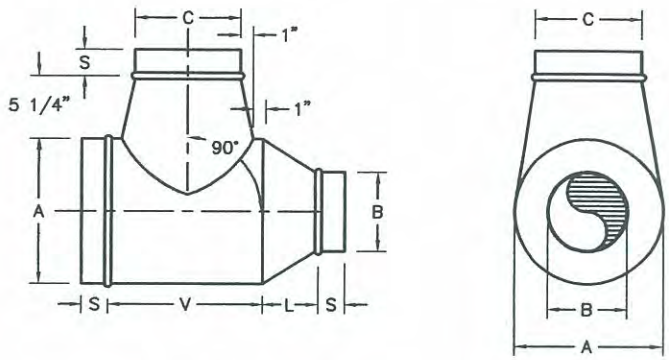
CONICAL TEE
CT1



DIMENSIONAL DATA:

- S=2"
- V=C+4"

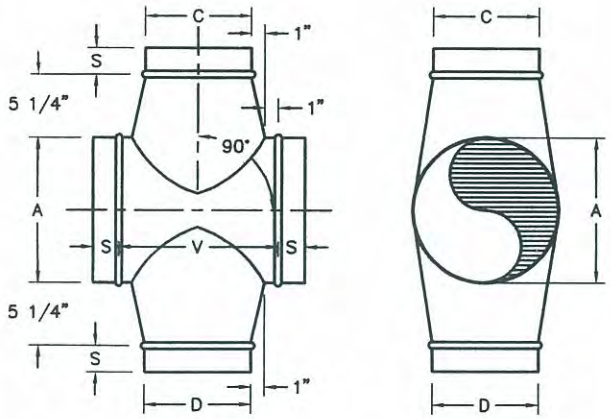
REDUCING CONICAL TEE
CT1R



DIMENSIONAL DATA:

- S=2"
- V=C+4"
- L=A–B (4" MIN.–12" MAX.)

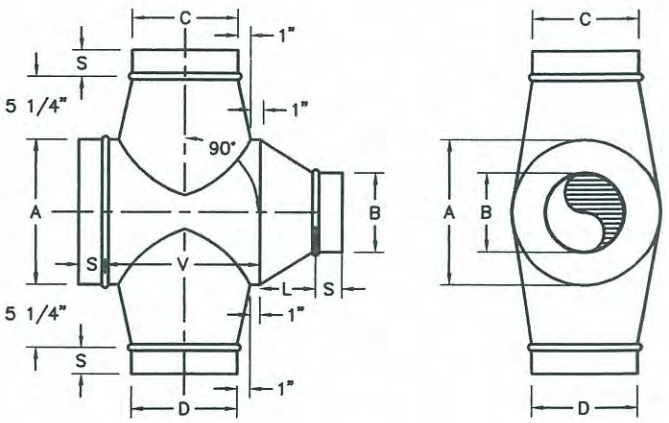
CONICAL CROSS
CT2



DIMENSIONAL DATA:

- S=2"
- V=LARGEST TAP+4"

REDUCING CONICAL CROSS
CT2R



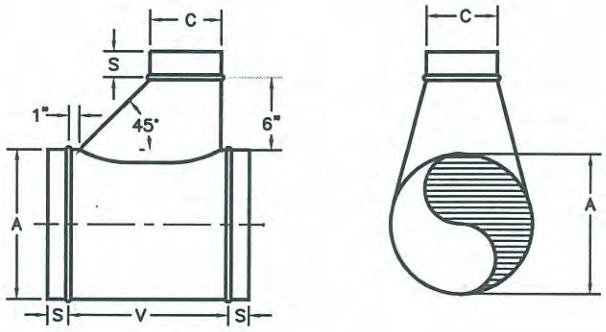
DIMENSIONAL DATA:

- S=2"
- V=LARGEST TAP+4"
- L=A–B (4" MIN.–12" MAX.)

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Combination Tees

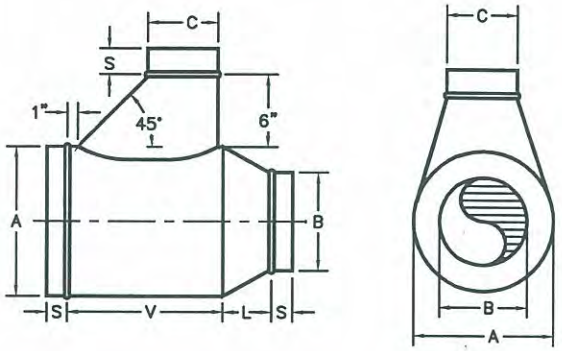
COMBINATION TEE
CMBT1



DIMENSIONAL DATA:

- S=2"
- V=(C+6)+2

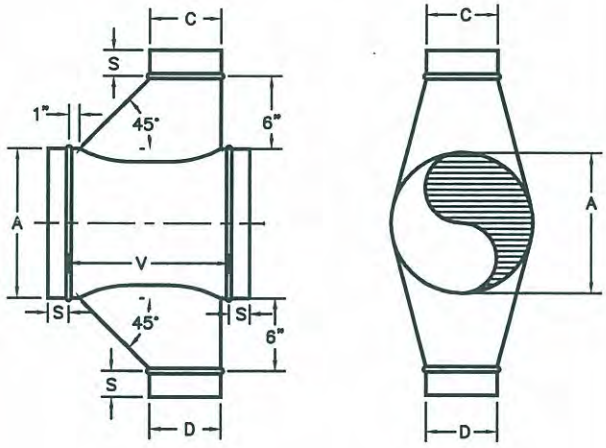
REDUCING COMBINATION TEE
CMBT1R



DIMENSIONAL DATA:

- S=2"
- V=(C+6)+2
- L=A–B (4" MIN.–12" MAX.)

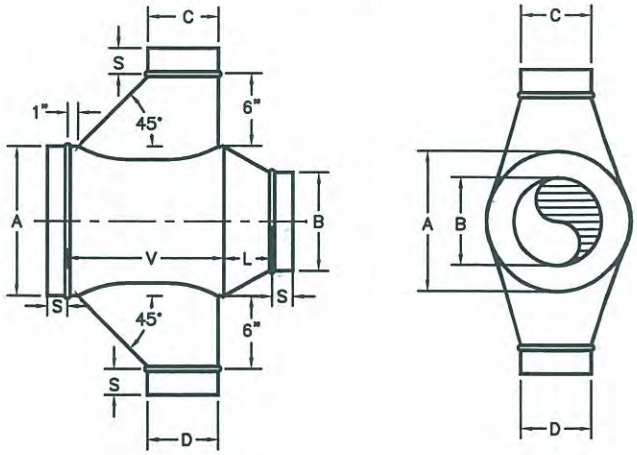
COMBINATION CROSS
CMBT2



DIMENSIONAL DATA:

- S=2"
- V=(LARGEST TAP+6)+2

REDUCING COMBINATION CROSS
CMBT2R



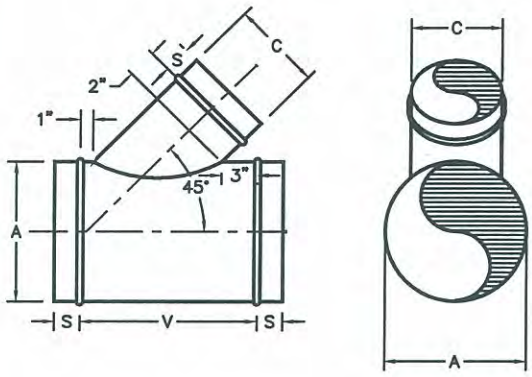
DIMENSIONAL DATA:

- S=2"
- V=(LARGEST TAP+6)+2
- L=A–B (4" MIN.–12" MAX.)

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Laterals

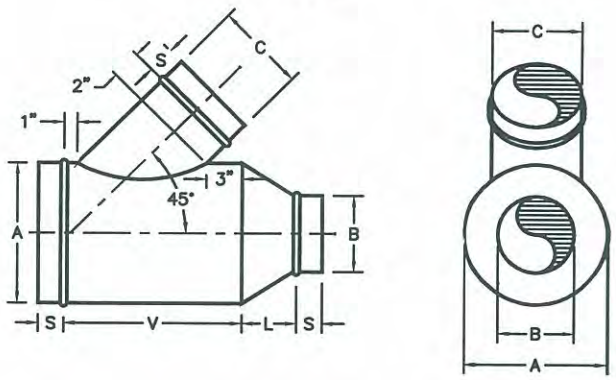
LATERAL
L1



DIMENSIONAL DATA:

- S=2"
- V=(1.414xC)+4"

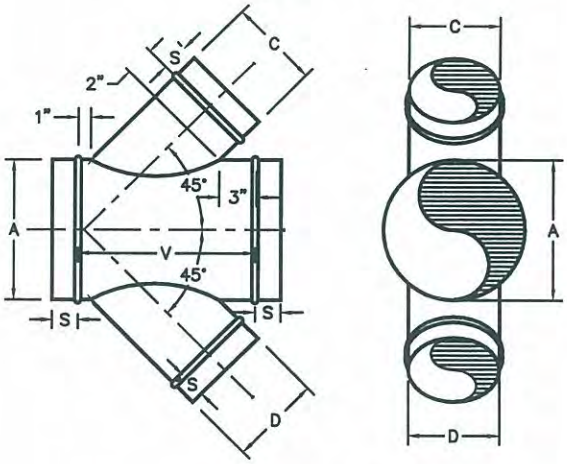
REDUCING LATERAL
L1R



DIMENSIONAL DATA:

- S=2"
- V=(1.414xC)+4"
- L=A–B (4" MIN.–12" MAX.)

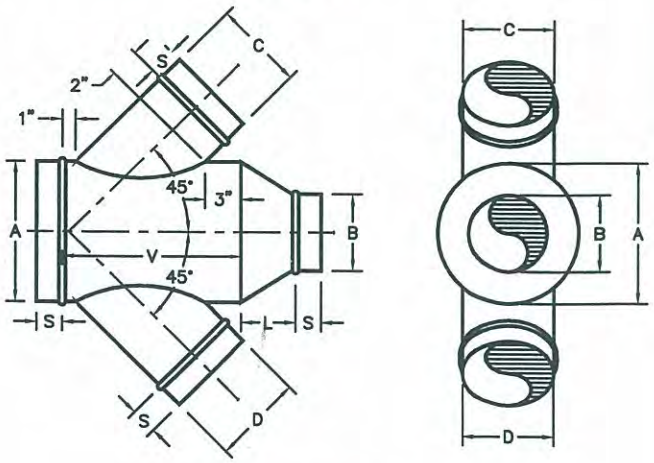
LATERAL CROSS
L2



DIMENSIONAL DATA:

- S=2"
- V=(1.414xC)+4"

REDUCING LATERAL CROSS
L2R



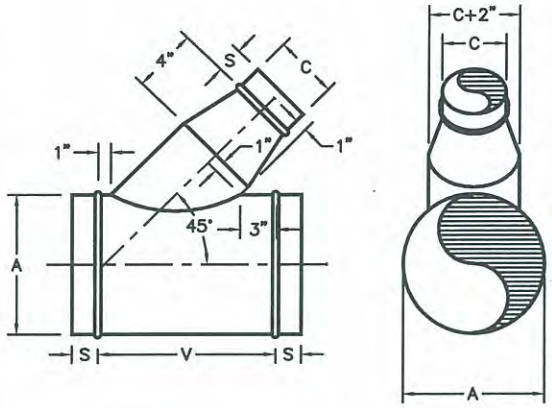
DIMENSIONAL DATA:

- S=2"
- V=(1.414xC)+4"
- L=A–B (4" MIN.–12" MAX.)

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Conical Laterals

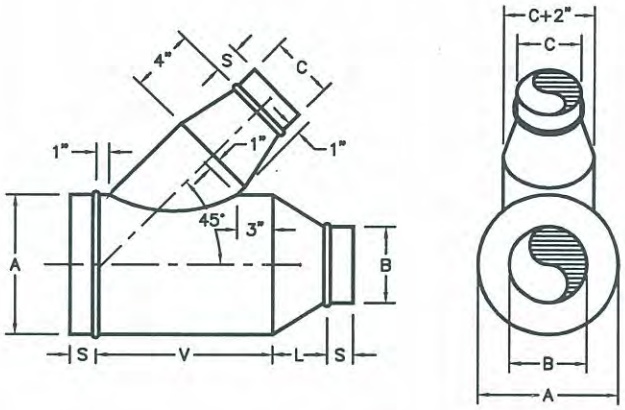
CONICAL LATERAL
CL1



DIMENSIONAL DATA:

- S=2"
- V=(1.414x(C+2"))+4"

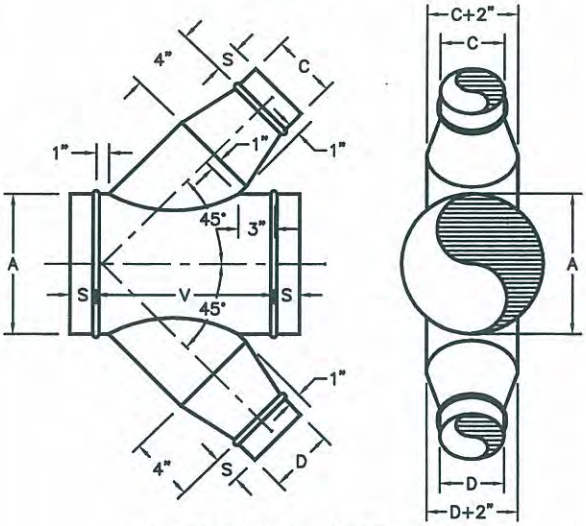
REDUCING CONICAL LATERAL
CL1R



DIMENSIONAL DATA:

- S=2"
- V=(1.414x(C+2"))+4"
- L=A–B (4" MIN.–12" MAX.)

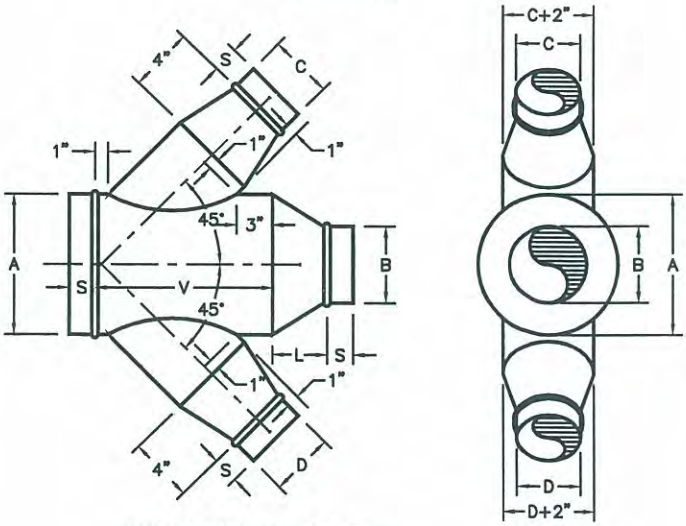
CONICAL LATERAL CROSS
CL2



DIMENSIONAL DATA:

- S=2"
- V=(1.414x(C+2"))+4"

REDUCING CONICAL LATERAL CROSS
CL2R



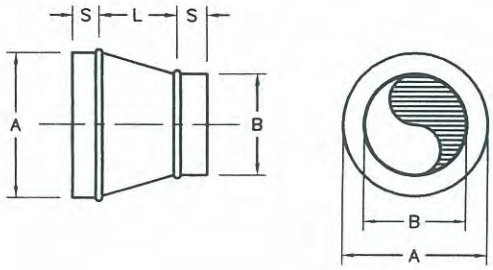
DIMENSIONAL DATA:

- S=2"
- V=(1.414x(C+2"))+4"
- L=A–B (4" MIN.–12" MAX.)

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

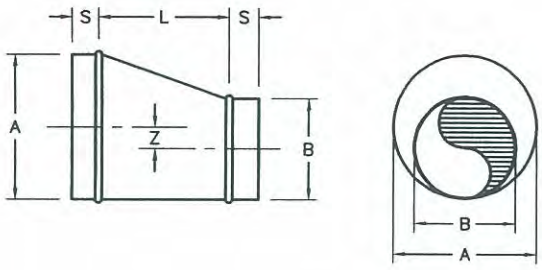
CONCENTRIC REDUCER
R1



DIMENSIONAL DATA:

- S=2"
- L=A–B (4" MIN.–12" MAX.)

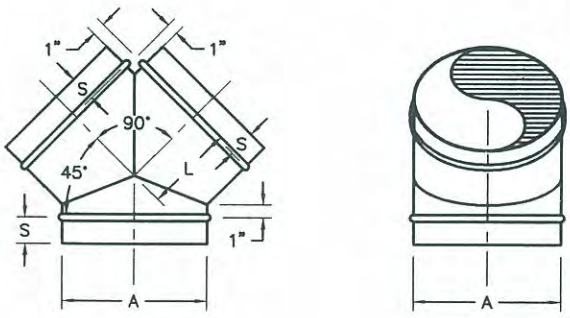
ECCENTRIC REDUCER
ER1



DIMENSIONAL DATA:

- S=2"
- L=A–B (4" MIN.–12" MAX.)
- Z=(A–B)/2

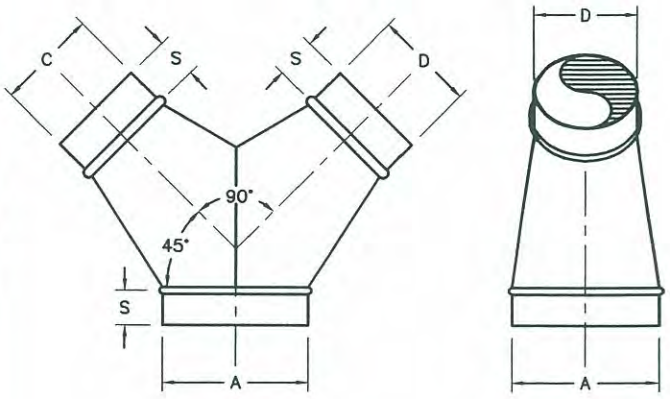
Y–BRANCH
Y2



DIMENSIONAL DATA:

- S=2"
- L=(A/2)+1"

REDUCING Y–BRANCH
Y2R



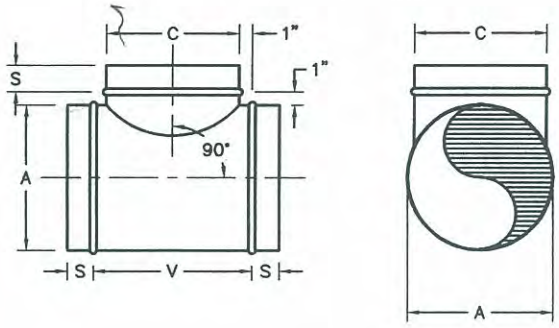
DIMENSIONAL DATA:

- S=2"

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Straight Tees

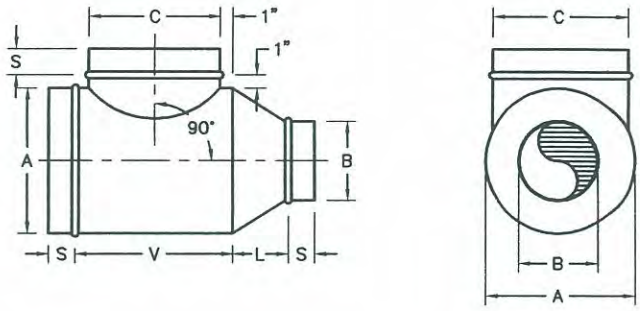
STRAIGHT TEE
T1



DIMENSIONAL DATA:

- S=2"
- V=C+2"

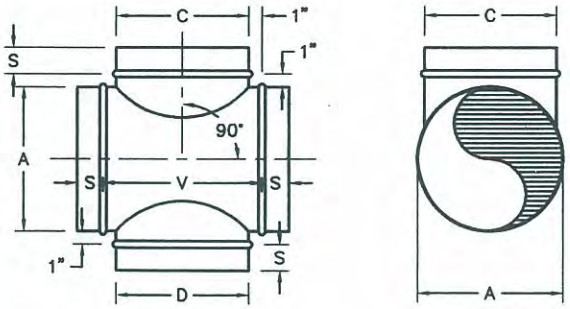
REDUCING TEE
T1R



DIMENSIONAL DATA:

- S=2"
- V=C+2"
- L=A–B (4" MIN.–12" MAX.)

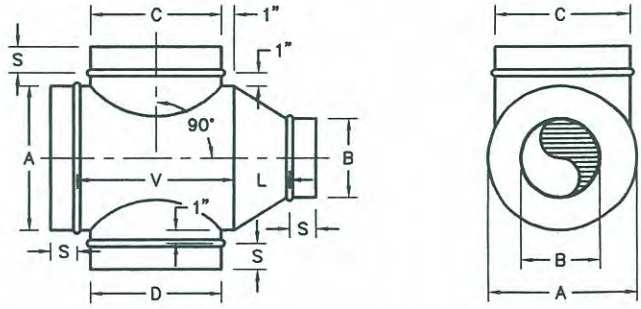
STRAIGHT CROSS
T2



DIMENSIONAL DATA:

- S=2"
- V=LARGEST TAP+2"

REDUCING CROSS
T2R



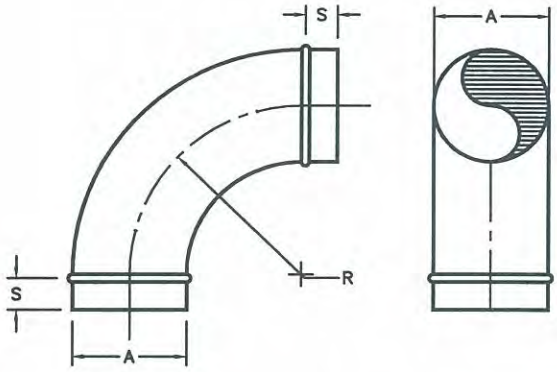
DIMENSIONAL DATA:

- S=2"
- V=LARGEST TAP+2"
- L=A–B (4" MIN.–12" MAX.)

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Single Wall Elbows

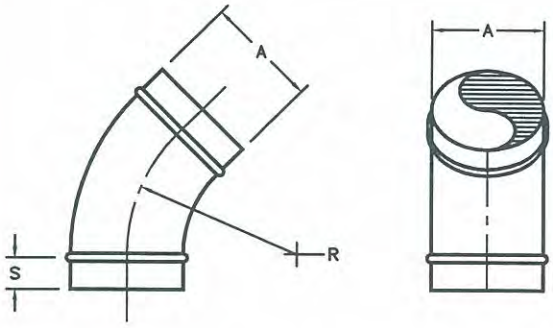
DIE STAMPED 90°
SE90



DIMENSIONAL DATA:

- S=2"
- R=1.5xA
- 3" THRU 9" DIAMETER

DIE STAMPED 45°
SE45

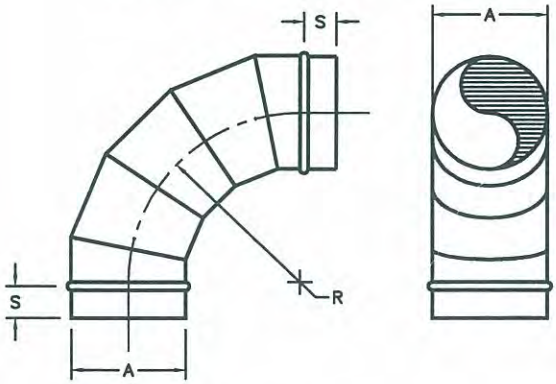


DIMENSIONAL DATA:

- S=2"
- R=1.5xA
- 3" THRU 9" DIAMETER

GORED ELBOW
E90–5
E45–3

E(ANGLE)–(NUMBER OF GORES)

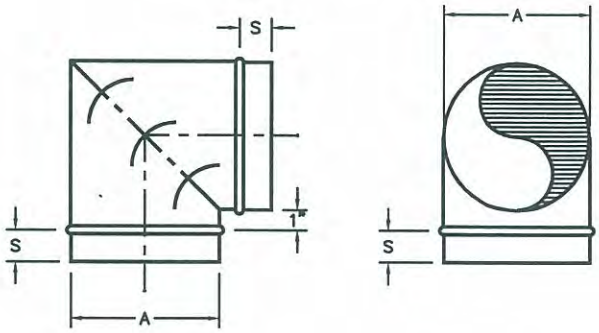


DIMENSIONAL DATA:

- S=2"
- R=1.5xA
- ANY ANGLE
- 3" DIA. AND OVER

0–35° – 2 PIECE
36–71° – 3 PIECE
72–90° – 5 PIECE

MITERED 90°
EV90



DIMENSIONAL DATA:

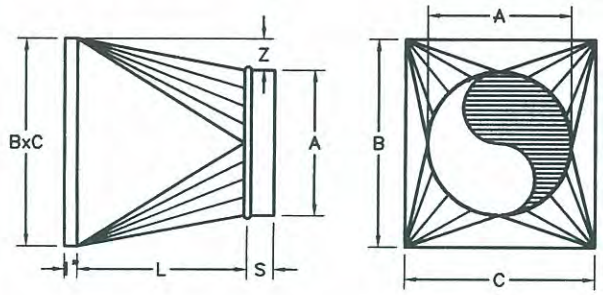
- S=2"
- 90° TYPICAL
- 3" DIA. AND OVER

DIAMETER	NUMBER OF VANES
3"–9"	2
10"–14"	3
15"–19"	4
20"–60"	5
OVER 60"	12" SPACING

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

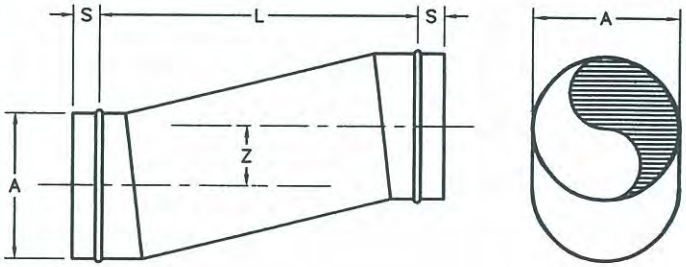
SQUARE TO ROUND
SQR



DIMENSIONAL DATA:

- S=2"
- SPECIFY BxC CONNECTION TYPE IE.– RAW, FLANGE, TDC,...ETC

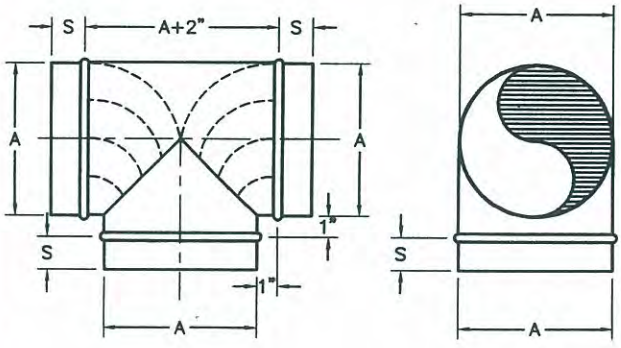
ROUND OFFSET
SET



DIMENSIONAL DATA:

- S=2"

BULLHEAD TEE
BHT

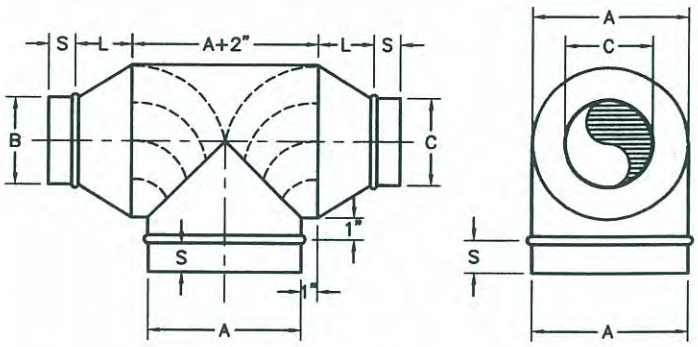


DIMENSIONAL DATA:

- S=2"
- WITH OR WITHOUT TURNING VANES

DIAMETER	NUMBER OF VANES
3"–5"	1
6"–9"	2
10"–14"	3
15"–19"	4
20"–60"	5
OVER 60"	12" SPACING

REDUCING BULLHEAD TEE
BTR



DIMENSIONAL DATA:

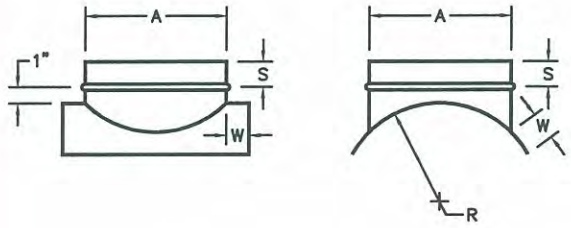
- S=2"
- WITH OR WITHOUT TURNING VANES

DIAMETER	NUMBER OF VANES
3"–5"	1
6"–9"	2
10"–14"	3
15"–19"	4
20"–60"	5
OVER 60"	12" SPACING

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

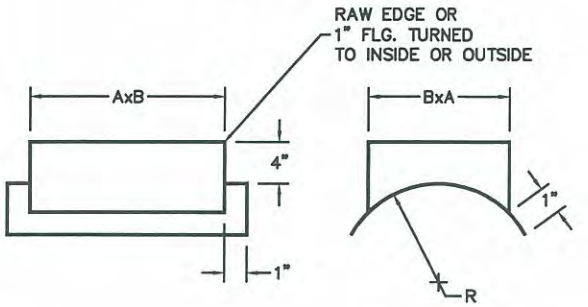
STRAIGHT SADDLE TAP
TST

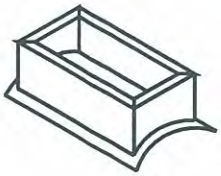


DIMENSIONAL DATA:

- S=2"
- W=2 1/2"
- R=1/2 DIAMETER

GRILL BOX TAP
GBST

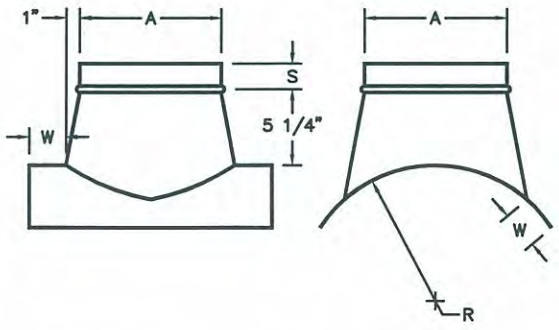




DIMENSIONAL DATA:

- C MUST BE LESS THAN 2A
- R=1/2 DIAMETER

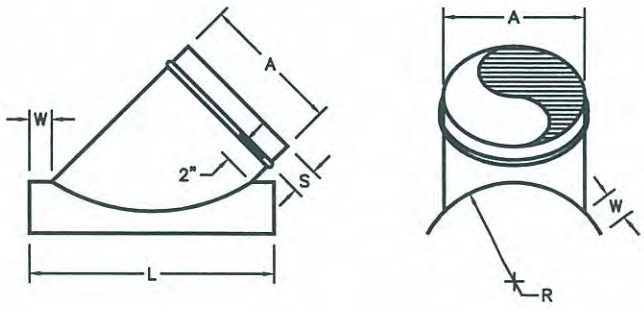
CONICAL SADDLE TAP
CST



DIMENSIONAL DATA:

- S=2"
- W=2 1/2"
- R=1/2 DIAMETER

LATERAL SADDLE TAP
LST



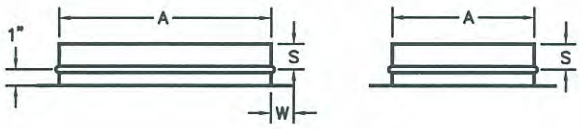
DIMENSIONAL DATA:

- S=2"
- L=(Ax1.414)+2W
- R=1/2 DIAMETER

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

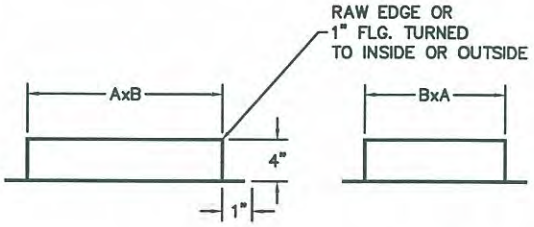
STRAIGHT SADDLE TAP ON FLAT
TST ON FLAT

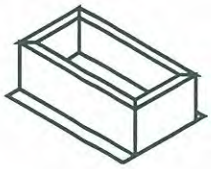


DIMENSIONAL DATA:

- S=2"
- W=2 1/2"

GRILL BOX TAP ON FLAT
GBST ON FLAT

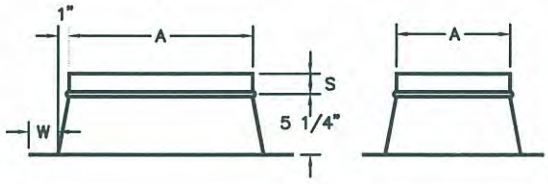




DIMENSIONAL DATA:

- C MUST BE LESS THAN 2A

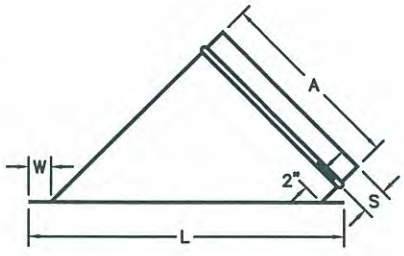
CONICAL SADDLE TAP ON FLAT
CST ON FLAT



DIMENSIONAL DATA:

- S=2"
- W=2 1/2"

LATERAL SADDLE TAP ON FLAT
LST ON FLAT



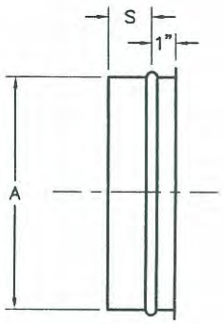
DIMENSIONAL DATA:

- S=2"
- L=(Ax1.414)+2W

SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

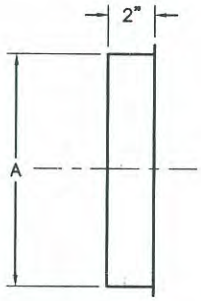
INSIDE PLUG
EP



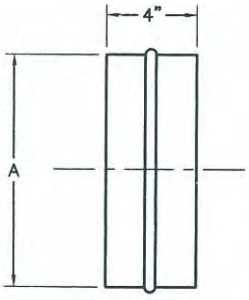
DIMENSIONAL DATA:

- S=2"

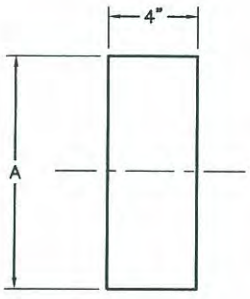
OUTSIDE CAP
EC



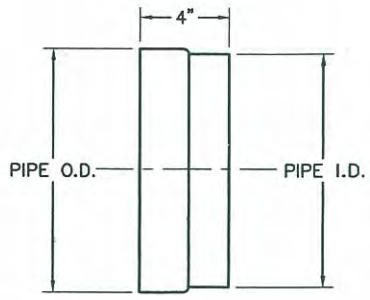
PIPE COUPLING
S1
(INSIDE COUPLING)



FITTING COUPLING
S2
(OUTSIDE COUPLING)



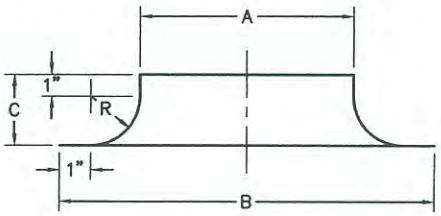
SPUN INSIDE–
OUTSIDE COUPLING
S3



SILVER SHEET ENTERPRISES, INC.

Fitting Standards
Misc. Fittings

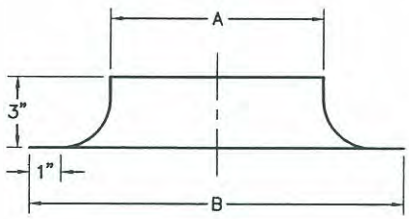
STANDARD BELLMOUTH
BM



DIMENSIONAL DATA:

"A"	"B"	"C"	"R"	OPENING
4	9"	2.5"	1.5"	7"
5	10"	2.5"	1.5"	8"
6	12"	3"	2"	10"
7	13"	3"	2"	11"
8	14"	3"	2"	12"
9	15"	3"	2"	13"
10	16"	3"	2"	14"
11	19"	4"	3"	17"
12	20"	4"	3"	18"
13	21"	4"	3"	19"
14	22"	4"	3"	20"
15	23"	4"	3"	21"
16	26"	5"	4"	24"
17	27"	5"	4"	25"
18	28"	5"	4"	26"
19	29"	5"	4"	27"
20	30"	5"	4"	28"
21	31"	5"	4"	29"
22	34"	6"	5"	32"
23	35"	6"	5"	33"
24	36"	6"	5"	34"
26	40"	7"	6"	38"
28	42"	7"	6"	40"
30	44"	7"	6"	42"
32	48"	8"	7"	46"
34	50"	8"	7"	48"
36	52"	8"	7"	50"
38	54"	8"	7"	52"
40	58"	9"	8"	56"
42	60"	9"	8"	58"
44	62"	9"	8"	60"
46	64"	9"	8"	62"
48	66"	9"	8"	64"

SHORT RADIUS BELLMOUTH
SRBM



DIMENSIONAL DATA:

"A"	"B"
6"	10"
7"	11"
8"	12"
9"	13"
10"	14"
11"	15"
12"	16"
13"	17"
14"	18"
15"	19"
16"	20"
17"	21"
18"	22"
19"	23"
20"	24"
21"	25"
22"	26"
23"	27"
24"	28"
26"	30"
28"	32"
30"	34"
32"	36"
34"	38"
36"	40"
38"	42"
40"	44"
42"	46"
44"	48"
46"	50"
48"	52"
50"	56"
52"	58"

SILVER SHEET ENTERPRISES, INC.

2" W.G. Static Pos. or Neg.

LOW PRESSURE DUCT

SHOP STANDARDS
DUCT CONSTRUCTION TABLE
(FOR GALVANIZED & 304 S.S. & 316 S.S. DUCTWORK)
(NOT FOR ALUMINUM)

DUCT SIZE	DUCT GAUGE	JOINT LENGTH	WIDE SIDE CONNECTOR	NARROW SIDE CONNECTOR	SPECIAL NOTES
0-10"	26ga	59"	FLAT SLIP T-6 24GA	FLAT DRIVE T-1 24GA	Ref. 1
11"-14"	26ga	59"	FLAT SLIP T-6 24GA	FLAT DRIVE T-1 24GA	Ref. 1
15"-26"	26ga	59"	FLAT SLIP/ STANDING SLIP	FLAT DRIVE T-1 24GA	Ref. 1
27"-30"	24ga	59"	STANDING SLIP	FLAT DRIVE T-1 24GA	Ref. 1
31"-36"	24ga	59"	STANDING SLIP	FLAT DRIVE T-1 24GA	Ref. 1
37"-42"	22ga	56"	STANDING SLIP	FLAT DRIVE T-1 24GA	Ref. 1
43"-48"	22ga	56"	T.D.C W/ C.T.R T-25a	T.D.C W/ C.T.R T-25a	Ref. 2
49"-60"	20ga	56"	T.D.C W/ C.T.R & J.T.R T-25a	T.D.C W/ C.T.R & J.T.R T-25a	Ref. 2
61"-96"	18ga	56"	T.D.C W/ C.T.R & J.T.R T-25a	T.D.C W/ C.T.R & J.T.R T-25a	Ref. 2
97" & UP	18ga	56"	T.D.C W/ C.T.R & J.T.R T-25a	T.D.C W/ C.T.R & J.T.R T-25a	Ref. 1

NOTES:
J.T.R. - JOINT TIE ROD
C.T.R. - CENTER TIE ROD
TIE RODS ARE 1/2" EMT
If MPT (Mid-point Tie Rods) are used, the reinforcement spacing is based on 2-1/2'.
References:
1. SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-22, Table 1-5.
2. SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1997, Addendum 1, page 1-41-6, Table 1-55.

SILVER SHEET ENTERPRISES, INC.

6" W.G Static Pos. or Neg. MEDIUM PRESSURE DUCT

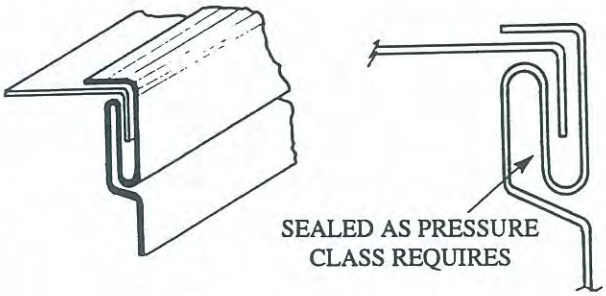
SHOP STANDARDS
DUCT CONSTRUCTION TABLE
(FOR GALVANIZED & 304 S.S. & 316 S.S. DUCTWORK)
(NOT FOR ALUMINUM)

DUCT SIZE	DUCT GAUGE	JOINT LENGTH	WIDE SIDE CONNECTOR	NARROW SIDE CONNECTOR	SPECIAL NOTES
0-8"	26ga	56"	T.D.C T-25a	T.D.C T-25a	Ref. 1
9"-12"	24ga	56"	T.D.C T-25a	T.D.C T-25a	Ref. 1
13"-24"	22ga	56"	T.D.C T-25a	T.D.C T-25a	Ref. 1
25"-28"	20ga	56"	T.D.C T-25a	T.D.C T-25a	Ref. 1
29"-40"	20ga	56"	T.D.C T-25a	T.D.C T-25a	Ref. 1
41"-50"	18ga	56"	T.D.C W/C.T.R & J.T.R T-25a	T.D.C W/C.T.R & J.T.R T-25a	Ref. 2
51"&UP	18ga	56"	T.D.C W/C.T.R & J.T.R T-25a	T.D.C W/C.T.R & J.T.R T-25a	Ref. 2

NOTES:
J.T.R. - JOINT TIE ROD
C.T.R. - CENTER TIE ROD
TIE RODS ARE 1/2" EMT
If MPT (Mid-point Tie Rods) are used, the reinforcement spacing is based on 2-1/2'.
References:
1. SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-20, Table 1-4.
2. SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1997, Addendum 1, page 1-41-6, Table 1-45.

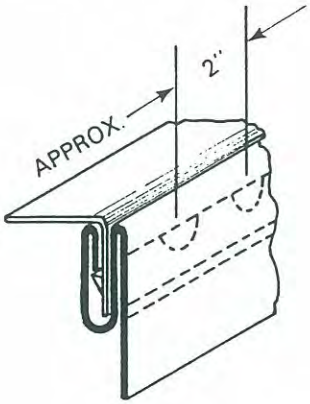
SILVER SHEET ENTERPRISES, INC.

Longitudinal Seams -Medium and Low Pressure



USED FOR
MED PRESSURE DUCT

PITTSBURGH LOCK



USED FOR
LOW PRESSURE DUCT

BUTTON PUNCH
SNAP LOCK

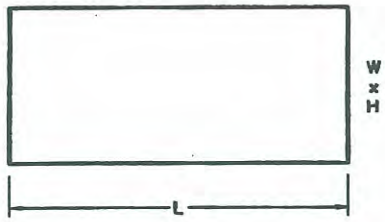
NOTES:

1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-67, figure 1-5.

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Straight Duct

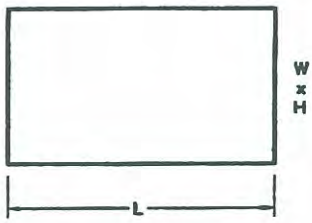
DEFAULT DUCT STRD



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = LENGTH

NON–DEFAULT DUCT STRN



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = LENGTH (CUSTOMER DETERMINED)

DEFAULT LENGTHS

SLIP AND DRIVE	59"
STANDING SLIP AND DRIVE	59"
TDC	56"
SLIP ON FLANGE	60"
VANSTONE ANGLE	59"
WELD FLANGE	59"

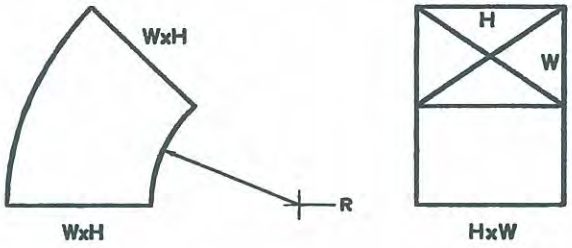
MATERIALS

GALVANIZED
ALUMINUM
PAINTGRIP
STAINLESS STEEL
PVC COATED
CARBON STEEL

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Misc. Elbows

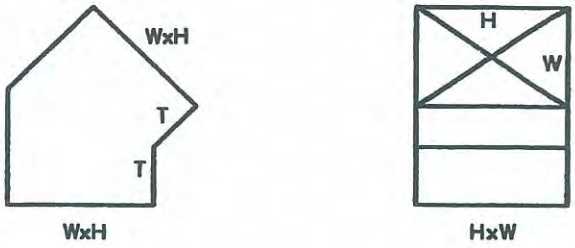
45° RADIUS ELBOW
4R12
(ANGLE 4-45° 3-30° 6-60°)R(RADIUS)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- R = W

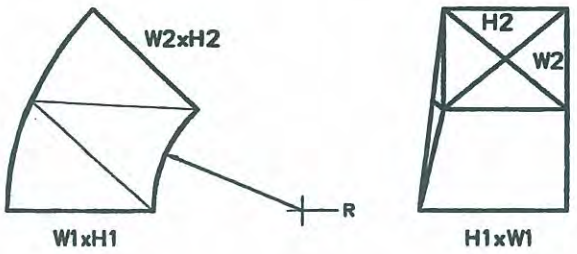
45° SQUARE ELBOW
4S66
(ANGLE 4-45° 3-30° 6-60°)S(THROATS)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- T = THROATS (6" DEFAULT)

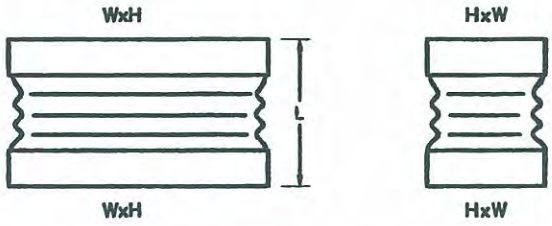
45° CUSTOM ELBOW
4RCE
(ANGLE 4-45° 3-30° 6-60°)RCE



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- R = CUSTOMER DETERMINED

CANVAS CONNECTION
CCON



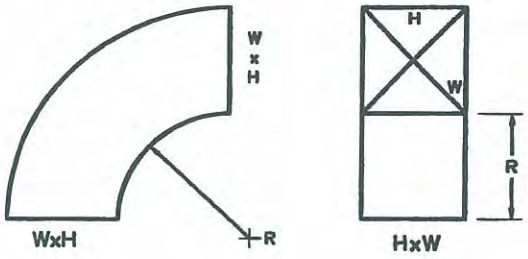
DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = 6" FOR SLIP & DRIVE
  = 7" FOR TDC
- SPECIFY FABRIC MATERIAL & END JOINTS

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Elbows

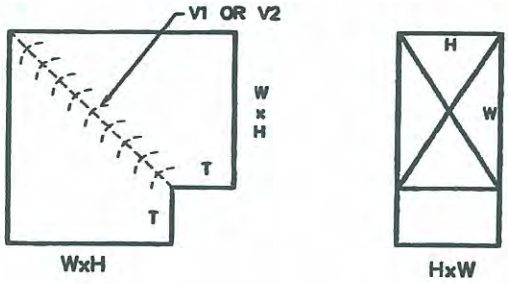
RADUIS ELBOW
ER12
ER(RADIUS)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- R = W

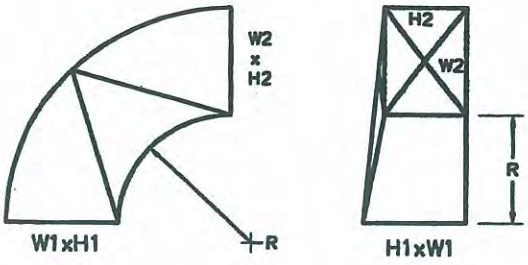
SQUARE ELBOW
ES66
ES(THROATS)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- T = THROATS (6" DEFAULT)
- V1 = SINGLE THICKNESS VANES
- V2 = DOUBLE THICKNESS VANES

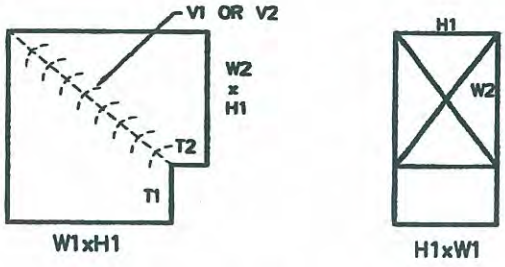
RADIUS ELBOW CUSTOM
ERTC



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- R = CUSTOMER DETERMINED

SQUARE ELBOW CUSTOM
TE2S



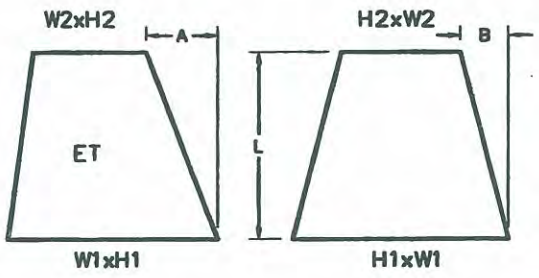
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT ONE
- T1 = CUSTOMER DETERMINED
- T2 = CUSTOMER DETERMINED
- V1 = SINGLE THICKNESS VANES
- V2 = DOUBLE THICKNESS VANES

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Transitions

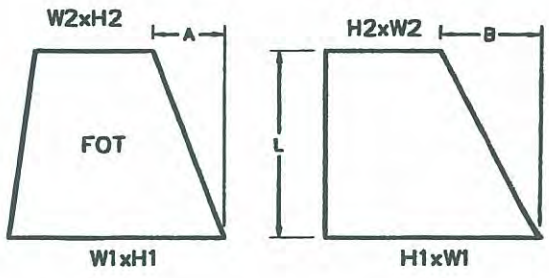
CUSTOM SIDES/ EQUAL TOP TRCE



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = CUSTOMER DETERMINED
- B = (H1−H2)/2

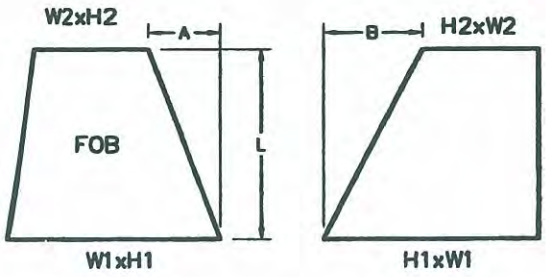
CUSTOM SIDES/ FLAT TOP TRCT



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = CUSTOMER DETERMINED
- B = (H1−H2)

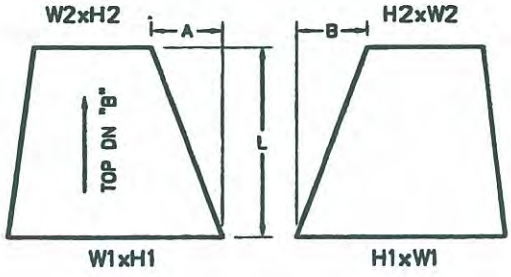
CUSTOM SIDES/ FLAT BOTTOM TRCB



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = CUSTOMER DETERMINED
- B = (H1−H2)

CUSTOM SIDES/ CUSTOM TOP TRCC



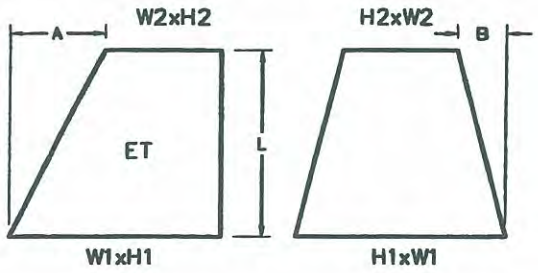
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = CUSTOMER DETERMINED
- B = CUSTOMER DETERMINED

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Transitions

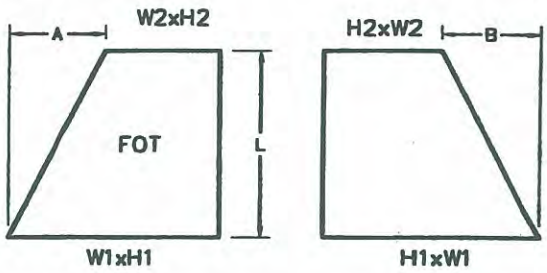
FLAT RIGHT/ EQUAL TOP TRRE



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)/2

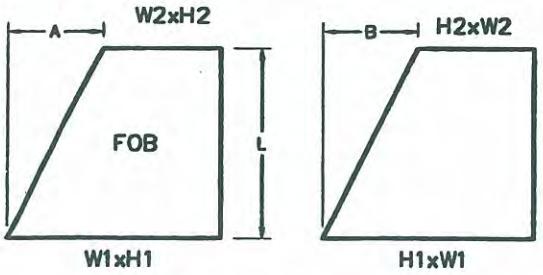
FLAT RIGHT/ FLAT TOP TRRT



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)

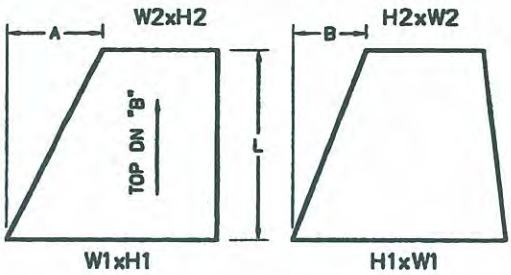
FLAT RIGHT/ FLAT BOTTOM TRRB



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)

FLAT RIGHT/ CUSTOM TOP TRRC



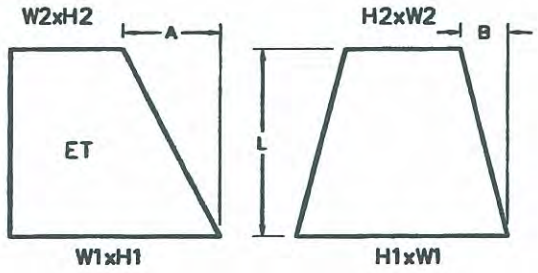
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = CUSTOMER DETERMINED

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Transitions

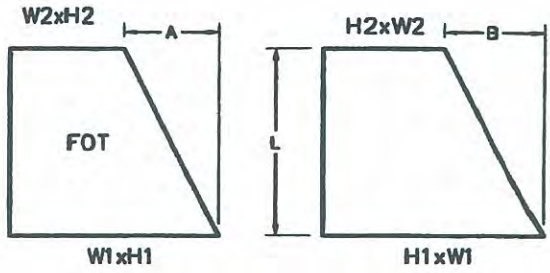
FLAT LEFT/ EQUAL TOP TRLE



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)/2

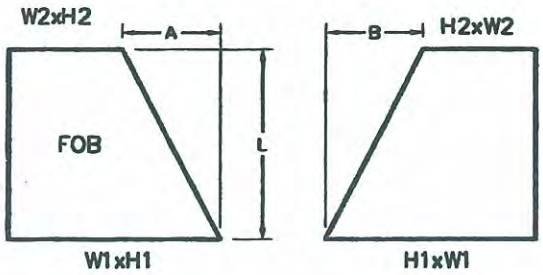
FLAT LEFT/ FLAT TOP TRLT



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)

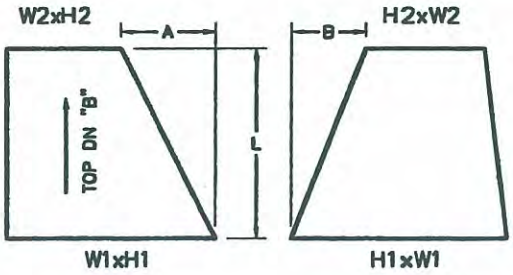
FLAT LEFT/ FLAT BOTTOM TRLB



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)

FLAT LEFT/ CUSTOM TOP TRLC



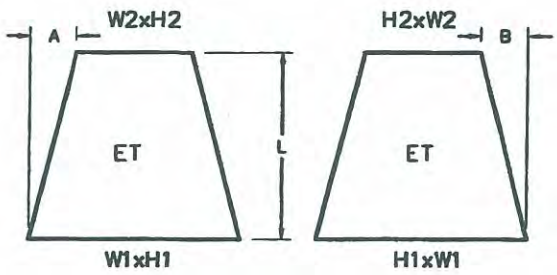
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = CUSTOMER DETERMINED

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Elbows

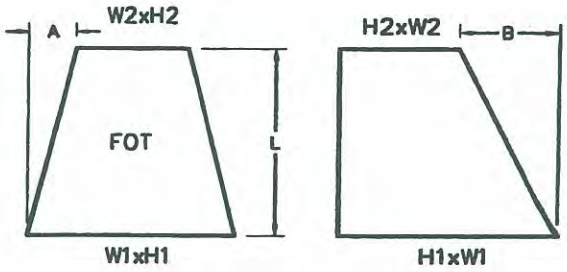
EQUAL SIDES/ EQUAL TOP TREE



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = (H1−H2)/2

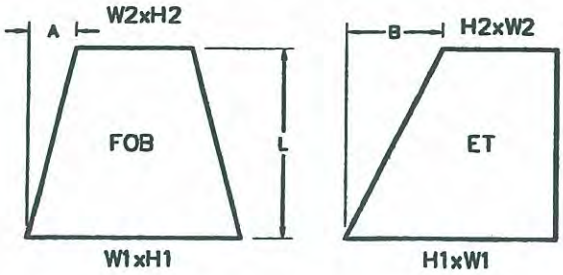
EQUAL SIDES/ FLAT TOP TRET



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = (H1−H2)

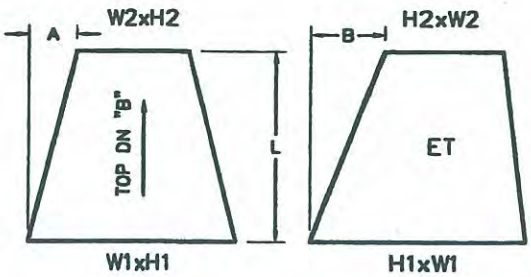
EQUAL SIDES/ FLAT BOTTOM TREB



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = (H1−H2)

EQUAL SIDES/ CUSTOM TOP TREC



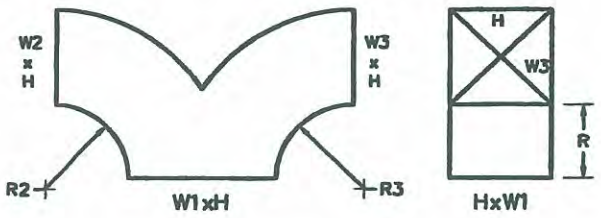
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = CUSTOMER DETERMINED

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Tees

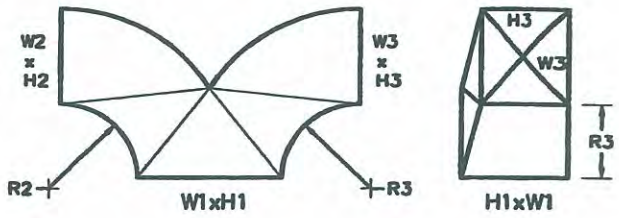
TEE 2 – BRANCH RADIUS TE2R



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H = HEIGHT
- R2 = W2
- R3 = W3

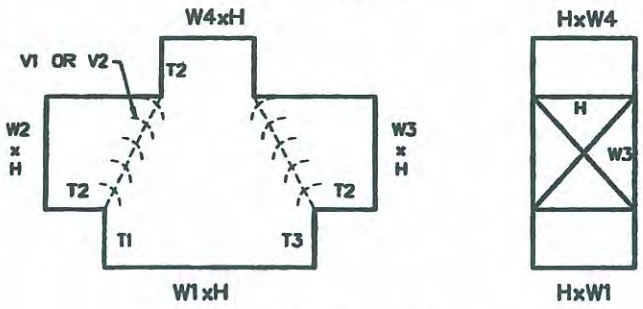
TEE 2 – BRANCH RADIUS CUSTOM TE2C



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- H3 = HEIGHT END THREE
- R2 = CUSTOMER DETERMINED
- R3 = CUSTOMER DETERMINED

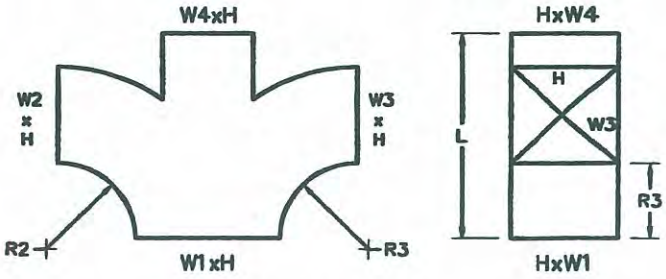
TEE 3 – BRANCH SQUARE TE3S



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- W4 = WIDTH END FOUR
- H = HEIGHT
- T1 = THROATS (6" DEFAULT)
- T2 = THROATS (6" DEFAULT)
- T3 = (W2+T1)–W3
- V1 = SINGLE THICKNESS VANES
- V2 = DOUBLE THICKNESS VANES

TEE 3 – BRANCH RADIUS TE3R



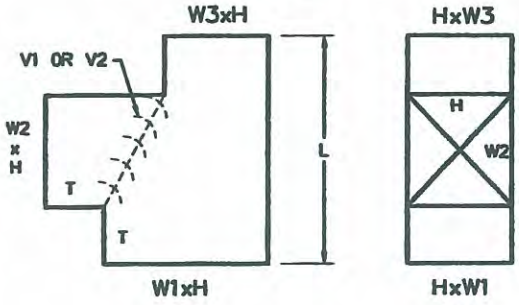
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- W4 = WIDTH END FOUR
- H = HEIGHT
- L = (W2x2)+2"
- R2 = W2
- R3 = W3

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Transitions

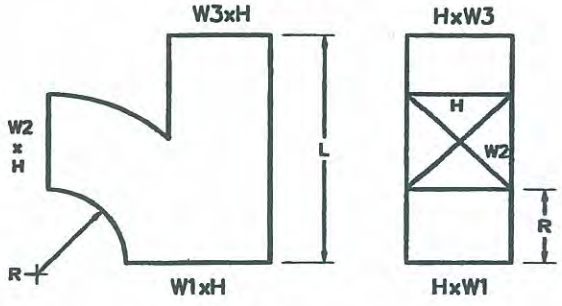
TEE 1 – BRANCH SQUARE TE1S



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H = HEIGHT
- L = LENGTH (MIN T+W2+2")
- T = THROATS (6" DEFAULT)
- V1 = SINGLE THICKNESS VANES
- V2 = DOUBLE THICKNESS VANES

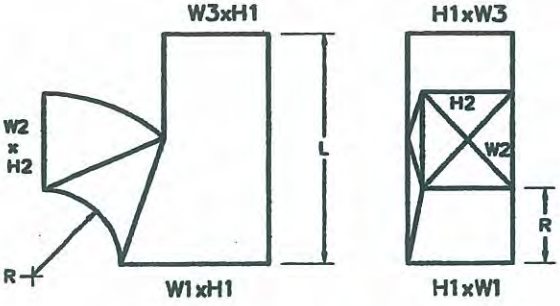
TEE 1 – BRANCH RADIUS TE1R



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H = HEIGHT
- L = LENGTH (MIN R+W2)
- R = W2 (STANDARD)

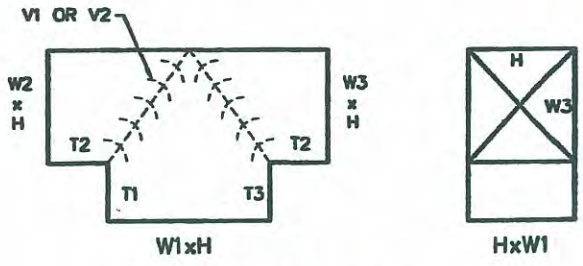
TEE 1–BRANCH RADIUS CUSTOM TE1C



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH (MIN R+W2)
- R = CUSTOMER DETERMINED

TEE 2 – BRANCH SQUARE TE2S



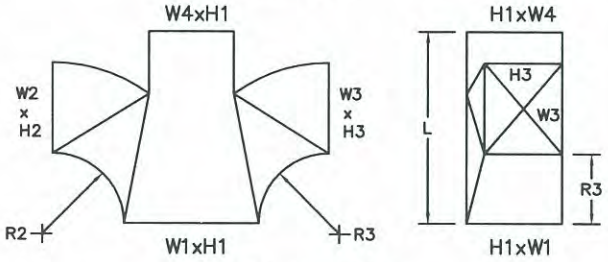
DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- H = HEIGHT
- T1 = THROATS (6" DEFAULT)
- T2 = THROATS (6" DEFAULT)
- T3 = (W2+T1)–W3
- V1 = SINGLE THICKNESS VANES
- V2 = DOUBLE THICKNESS VANES

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Misc. Fittings

TEE 3 – BRANCH RADIUS CUSTOM
TE3C



DIMENSIONAL DATA:

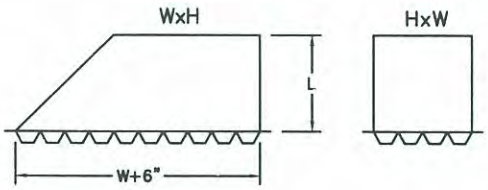
- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- W3 = WIDTH END THREE
- W4 = WIDTH END FOUR
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- H3 = HEIGHT END THREE
- L = W2+R2+2"
- R2 = CUSTOMER DETERMINED
- R3 = CUSTOMER DETERMINED

END CAP
ECAP

DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = 1" FOR SLIP & DRIVE
  = 1 3/8" FOR OTHER JOINTS

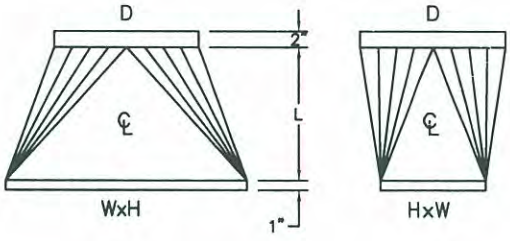
TAKE – OFF
TOFF



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = 6" FOR SLIP & DRIVE
  = 8" FOR OTHER JOINTS

SQUARE TO ROUND
SQRD



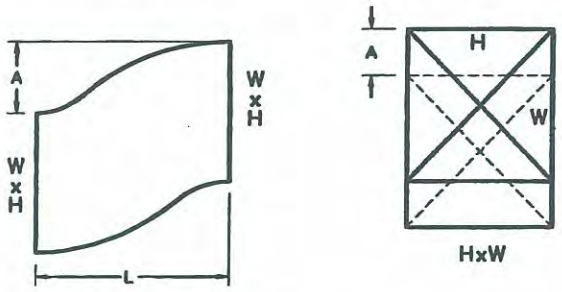
DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- D = DIAMETER (D–1/8" DEFAULT)
- L = LENGTH (12" DEFAULT)
- SPECIFY WxH CONNECTION TYPE
  IE: RAW, FLANGE, SLIP,..ETC.

SILVER SHEET ENTERPRISES, INC.

Fitting Standards Offsets

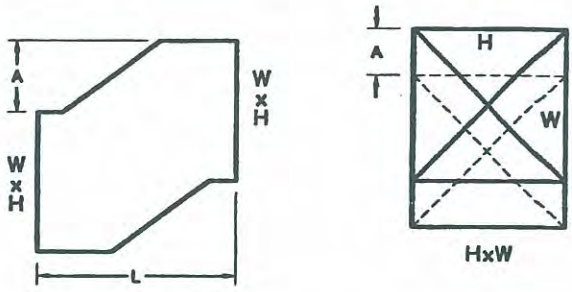
OGEE OFFSET
OO15
OO(OFFSET)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = LENGTH
- A = OFFSET

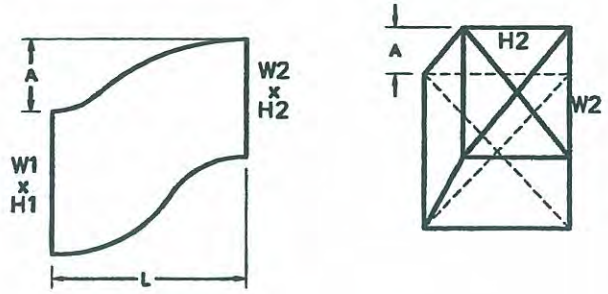
SQUARE OFFSET
OS15
OS(OFFSET)



DIMENSIONAL DATA:

- W = WIDTH
- H = HEIGHT
- L = LENGTH
- A = OFFSET

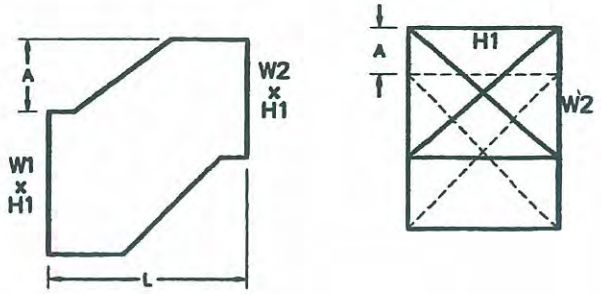
OGEE OFFSET CUSTOM
OOTC



DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = OFFSET

SQUARE OFFSET CUSTOM
OSTC

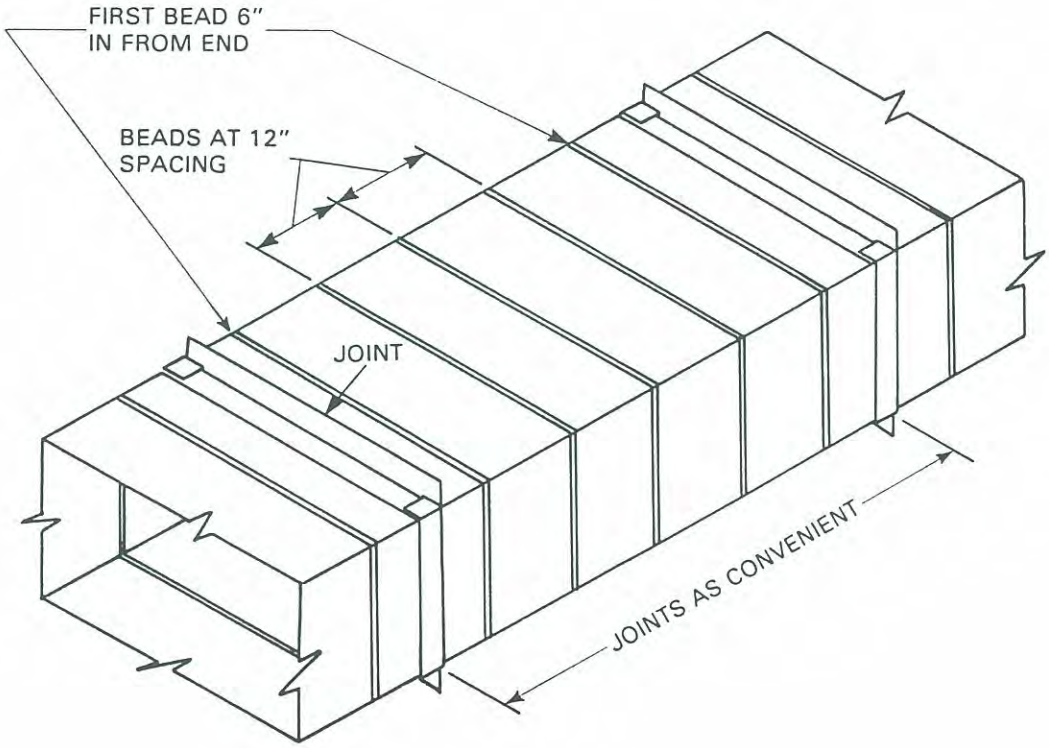


DIMENSIONAL DATA:

- W1 = WIDTH END ONE
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- L = LENGTH
- A = OFFSET

SILVER SHEET ENTERPRISES, INC.

Beaded Duct

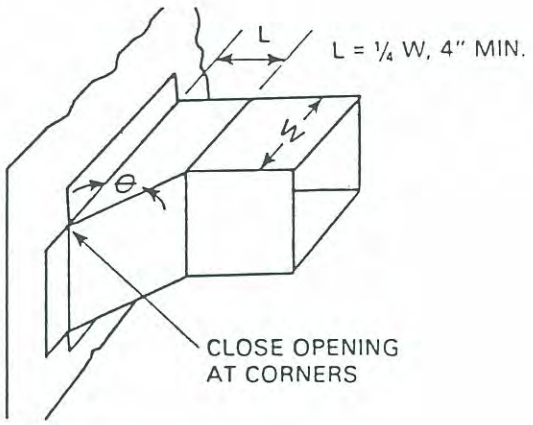


NOTES:

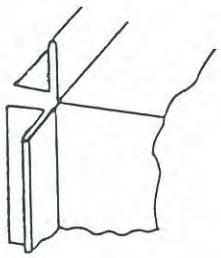
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-75, figure 1-8.

SILVER SHEET ENTERPRISES, INC.

Branch Connections



45 DEGREE ENTRY



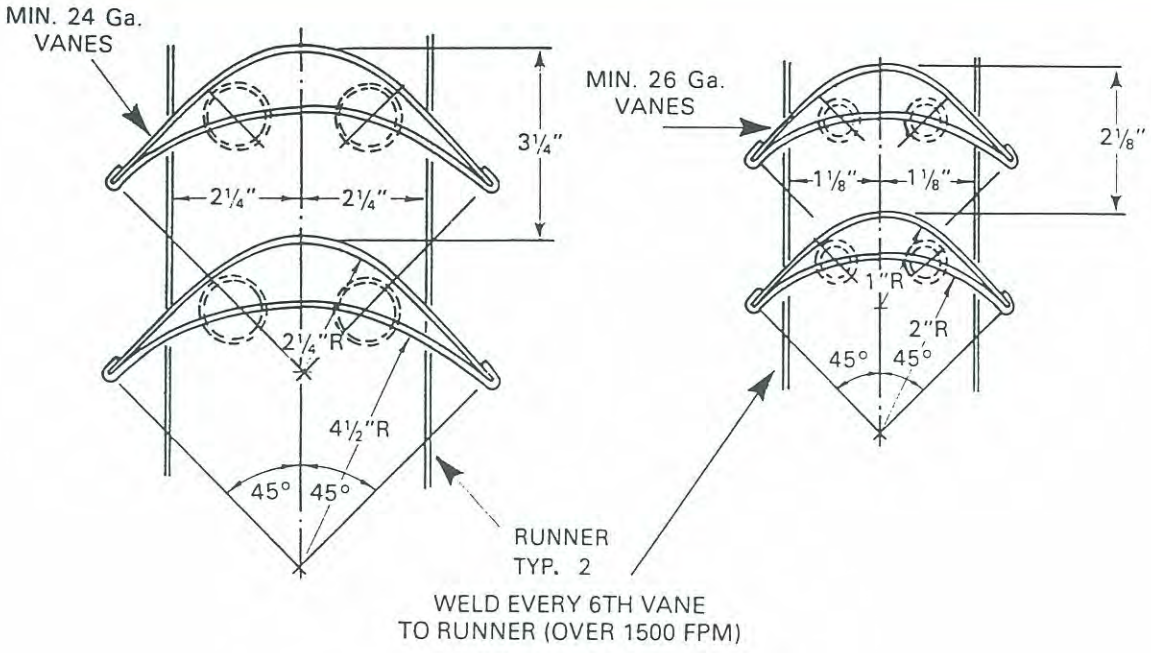
CLINCH LOCK

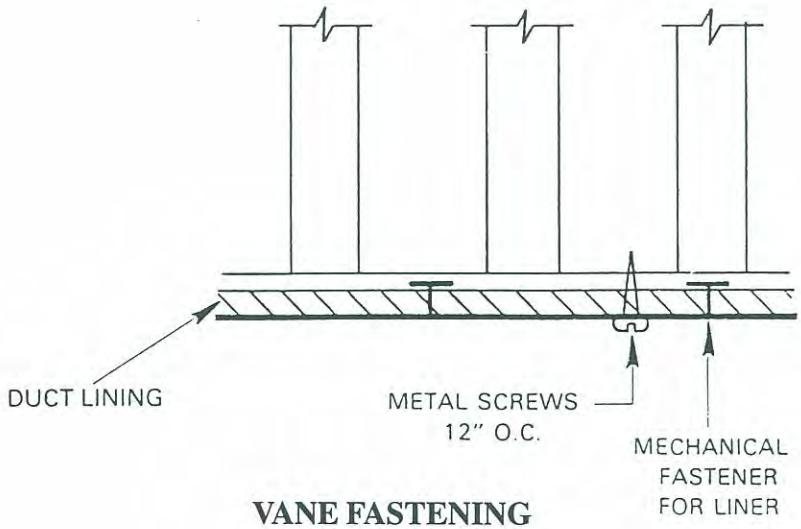
NOTES:

1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 2-8, figure 2-6.
2) Extractors to be furnished and installed by erectors where specified

SILVER SHEET ENTERPRISES, INC.

Airfoil Turning Vanes





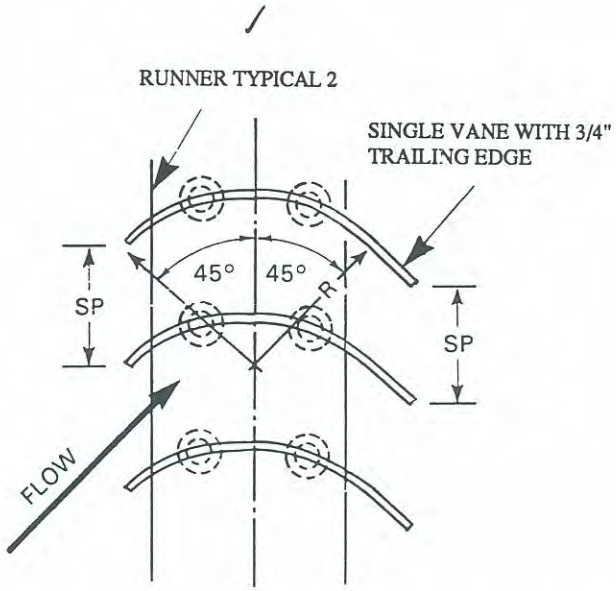
VANE FASTENING DETAIL

NOTES:

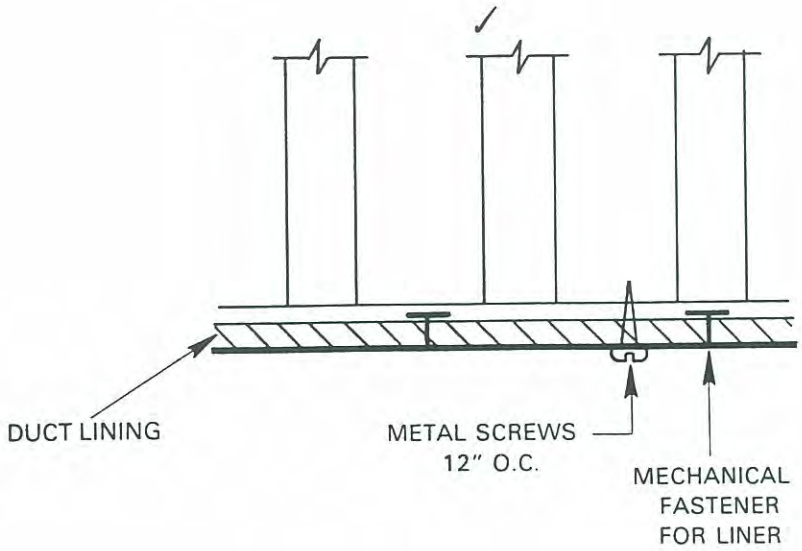
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, pages 2-5 and 2-6, figures 2-3 and 2-4.
2) Maximum unsupported small vane length is 48" and large vane length is 72".

SILVER SHEET ENTERPRISES, INC.

Single Turning Vanes



VANE SCHEDULE			
	R	SP.	GA
SMALL	2"	1-1/2"	24
LARGE	4-1/2"	3-1/4"	22



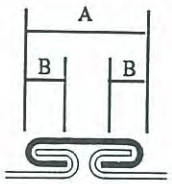
VANE FASTENING DETAIL

NOTES:

1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, pages 2-5 and 2-6, figures 2-3 and 2-4.
2) Maximum unsupported vane length is 36".

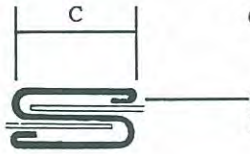
SILVER SHEET ENTERPRISES, INC.

Transverse Connectors - FOR LOW PRESSURE DUCT



A - 1-1/2"
B - 7/16"

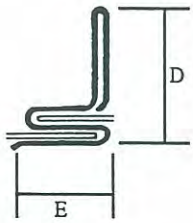
T-1 FLAT DRIVE



C - 1-1/2

3/16" HEM
INSIDE TYPICAL

T-6 FLAT SLIP



D - 1-1/4"
E - 1-9/16"

T-11 STANDING SLIP

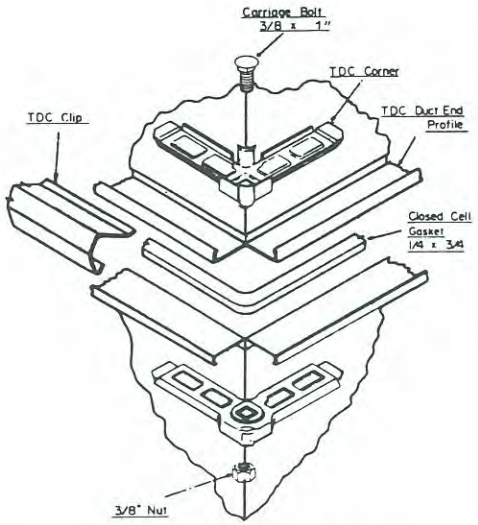
NOTES:

1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-61, figure 1-4.

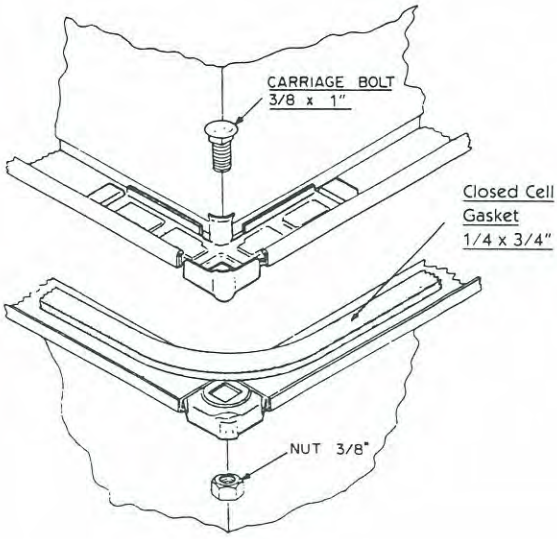
2) See Duct Construction Tables for limits of application.

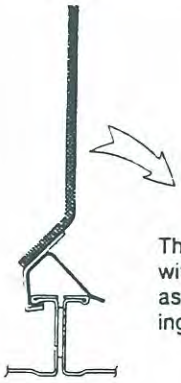
SILVER SHEET ENTERPRISES, INC.

T.D.C. Connectors - USED BY MED PRESSURE DUCT



CORNER ASSEMBLY





The clamping TDC Clips are installed with 6" wide full coverage TDC Clip tool as shown. For recommended Clip spacing, see Chart

When using TDC in conjunction with slip-on four bolt Connectors, it may be desirable to increase tension on TDC Clip.

To tighten the grip of the TDC Clip to the flange by overbending the long leg of the Clip, use the forming end of the tool as shown at left.

CAUTION: Use of a hammer for installation will damage Clip and may cause leakage.

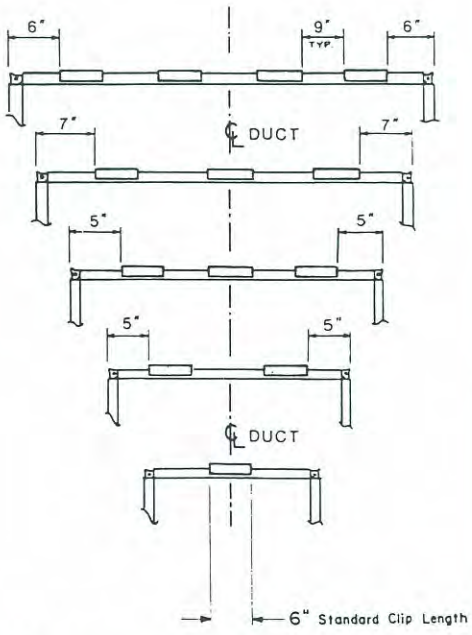
60" DUCT
4 REQ'D

48" DUCT
3 REQ'D

36" DUCT
3 REQ'D

24" DUCT
2 REQ'D

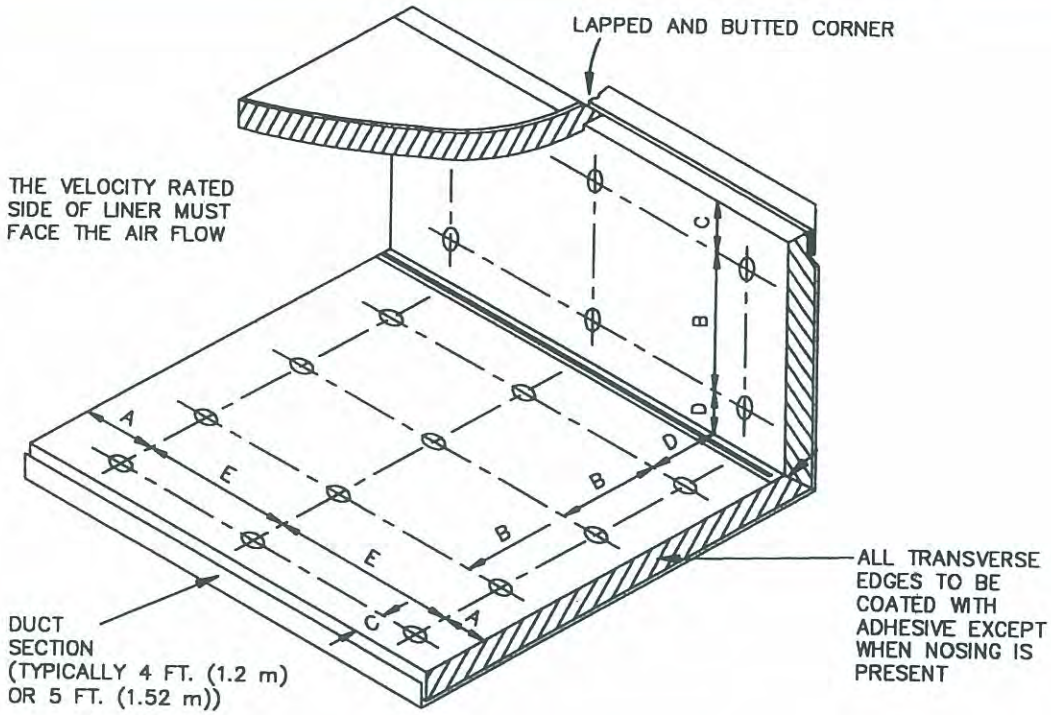
18" DUCT
& SMALLER
1 REQ'D



RECOMMENDED CLIP SPACE

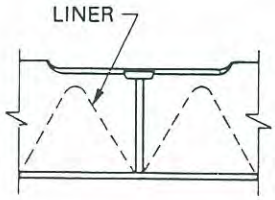
SILVER SHEET ENTERPRISES, INC.

Duct Liner Installation



LINEAR FASTENING SCHEDULE					
VELOCITY	**DIMENSIONS**				
	A	**B**	**C**	**D**	**E**
0 - 2500 FPM	3"	12"	4"	6"	18"
2501 - 6000 FPM	3"	6"	4"	6"	16"

FASTENERS:



WELDED PIN
INTEGRAL HEAD

NOTES:

1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, pages 2-24 and 2-28, figure 2-19 and 2-20.

Linacoustic RC™

Fiber Glass Duct Liner With Reinforced Coating System

Description

Linacoustic RC is a flexible duct liner insulation made from strong, glass fibers bonded with a thermosetting resin. The airstream surface is protected with JM's exclusive Reinforced Coating System, which combines our state-of-the-art Permacote® acrylic coating with a flexible glass cloth reinforcement.

Factory-Applied Edge Coating

Edge coating is factory applied to the edges of the liner core, assuring coverage of the leading edges per NAIMA/SMACNA requirements. Shop fabrication cuts may be coated with the SuperSeal® Duct Butter and Edge Treatment products (refer to publication AHS-202).

Uses

Linacoustic RC is specifically designed for lining sheet metal ducts in air conditioning, heating and ventilating systems, providing superior acoustical and thermal performance.

Advantages

Improves Indoor Building Environment. Linacoustic RC improves indoor environmental quality by helping to control both temperature and sound.

Resistant to Dust and Dirt. The tough, acrylic polymer Permacote coating helps guard against the incursion of dust or dirt into the substrate, minimizing the potential for biological growth.

Will Not Support Microbial Growth. Permacote coating is formulated with an immobilized, EPA-registered, protective agent to protect the coating from potential growth of fungus and bacteria.

Linacoustic RC duct liner meets all requirements of ASTM C 1071 for fungi and bacterial resistance. Tests were conducted in accordance with ASTM C 1338 and ASTM G 21 (fungi testing) and ASTM G 22 (bacteria resistance testing). Detailed information is available in Johns Manville fact sheet HSE-103FS.

Note: As with any type of surface, microbial growth may occur in accumulated duct system dirt, given certain conditions. This risk is minimized with proper design, filtration, maintenance and operation of the HVAC system.

GREENGUARD®. This certification is proof that the product meets the Environmental Institute's indoor air quality standards for VOCs.

Cleanability. If HVAC system cleaning is required, the Reinforced Coating airstream surface may be cleaned with industry-recognized dry methods. See the North American Insulation Manufacturers Association (NAIMA) "Cleaning Fibrous Glass Insulated Air Duct Systems."

Minimizes Pre-Installation Damage. Linacoustic RC's Reinforced Coating System is highly resistant to damage that can occur during in-shop handling, fabrication, jobsite shipping, and installation.

Highly Resistant to Water. The Reinforced Coating surface provides superior resistance to penetration of incidental water into the fiber glass wool core.

Easy to Fabricate. Linacoustic RC is light in weight and easy to handle. Clean, even edges can be accurately cut with regular shop tools.

Available Forms

Thickness	(in)	(mm)
	½	13
* *	1	25
	1 ½	38
	2	51
Roll Width*	**(in)**	**(mm)**
	34 to 36	864 to 914
	44 to 48	1118 to 1219
* *	56 to 60	1422 to 1524
	66 to 72	1676 to 1829
Roll Length**	**(lineal feet)**	**(lineal meters)**
	50	15
	100	31
	150	46
	200	61

*Available in ¼" (6.4 mm) increments. **Check with plant for availability.

Performance Limits

Maximum Air Velocity 6,000 fpm (30.5 m/sec).

Maximum Operating Temperature 250°F (121°C)

Water Repellency

Per Cent Mass Gain (JM 436-1006)	6.2% (avg.)
INDA IST 80.6-92	≥ 6

Installation

Linacoustic RC installation must be performed in accordance with the requirements of the NAIMA Fibrous Glass Duct Liner Standard, or SMACNA HVAC Duct Construction Standard. All transverse edges, or any edges exposed to airflow, must be coated with an approved duct liner coating material, such as Johns Manville SuperSeal® products.

Specification Data

Linacoustic RC Fiber Glass Duct Liner With Reinforced Coating System

Thermal Performance

Thickness (in)	Thickness (mm)	R-Value (hr•ft²•°F)/Btu	R-Value m²•°C/W	Conductance Btu/(hr•ft²•°F)	Conductance W/m²•°C
1/2	13	2.2	0.38	.46	2.61
* * 1	25	4.2	0.74	.24	1.36
1 1/2	38	6.3	1.11	.16	0.91
2	51	8.0	1.41	.13	0.74

R-Value and Conductance are calculated from the material thermal conductivity tested in accordance with ASTM C 518 at 75°F (24°C) mean temperature.

Sound Absorption Coefficients (Type "A" Mounting)

Thickness (in)	Thickness (mm)	Sound Absorption Coefficient at Frequency (Cycles per Second) of 125	250	500	1000	2000	4000	NRC
1/2	13	0.07	0.20	0.44	0.66	0.84	0.93	0.55
* * 1	25	0.08	0.31	0.64	0.84	0.97	1.03	0.70
1 1/2	38	0.10	0.47	0.85	1.01	1.02	0.99	0.85
2	51	0.25	0.66	1.00	1.05	1.02	1.01	0.95

Coefficients were tested in accordance with Test Method ASTM C 423-90 and ASTM E 795.

ISO 9000 Certification

Johns Manville mechanical insulation products are designed, manufactured and tested in our own facilities, which are certified and registered to stringent ISO 9000 (ANSI/ASQC 90) series quality standards. This certification, along with regular, independent third-party auditing for compliance, is your assurance that Johns Manville products deliver consistent high quality.

Surface Burning Characteristics

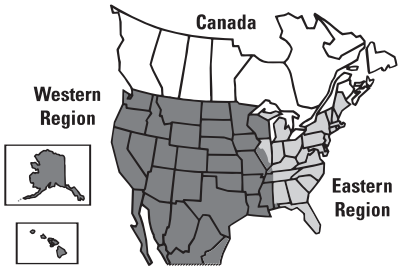
Flame Spread	not over 25
Smoke Developed	not over 50

Per UL 723, ASTM E 84 and CAN/ULC S102-M88 test methods.
If UL labels are required, they may be requested at time of order.

Specification Compliance

- ASTM C 1071, Type I, Flexible (Replaced HH-I-545B and NAIMA AHC 101)
- ASTM G 21 and G 22
- ICC Compliant
- California Title 24
- SMACNA Application Standards for Duct Liners
- NAIMA Fibrous Glass Duct Liner Installation Standard
- NFPA 90A and 90B, FHC 25/50 and Limited Combustibility
- Conforms to ASHRAE 62-2001
- Canada: CGSB 51-GP-11M
  CAN/ULC S102-M88

View MSDS



North American Sales Offices, Performance Materials Division

Eastern Region
P.O. Box 158
Defiance, OH 43512
(800) 334-2399
Fax: (419) 784-7866

Western Region and Canada
P.O. Box 5108
Denver, CO 80217
(800) 368-4431
Fax: (303) 978-4661

Outside North America
(303) 978-2939
Fax: (303) 978-2627

Johns Manville

Performance Materials Division
P.O. Box 5108
Denver, CO 80217-5108
Product Information: (800) 654-3103
www.jm.com/ahs

The physical and chemical properties of Linacoustic RC™ Fiber Glass Duct Liner with Reinforced Coating System represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to assure current information. **All Johns Manville products are sold subject to Johns Manville's Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville Limited Warranty and Limitation of Remedy, call the 800 number below.** For information on other Johns Manville thermal insulations and systems and a copy of the Spec-Line® CSI formatted specifications, call **(800) 654-3103.**

AHS-329 6-05 (Replaces 2-05)