TurnKey
DUCT SYSTEMS

RECTANGULAR HVAC DUCT and FITTINGS

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Irmo, SC 29063

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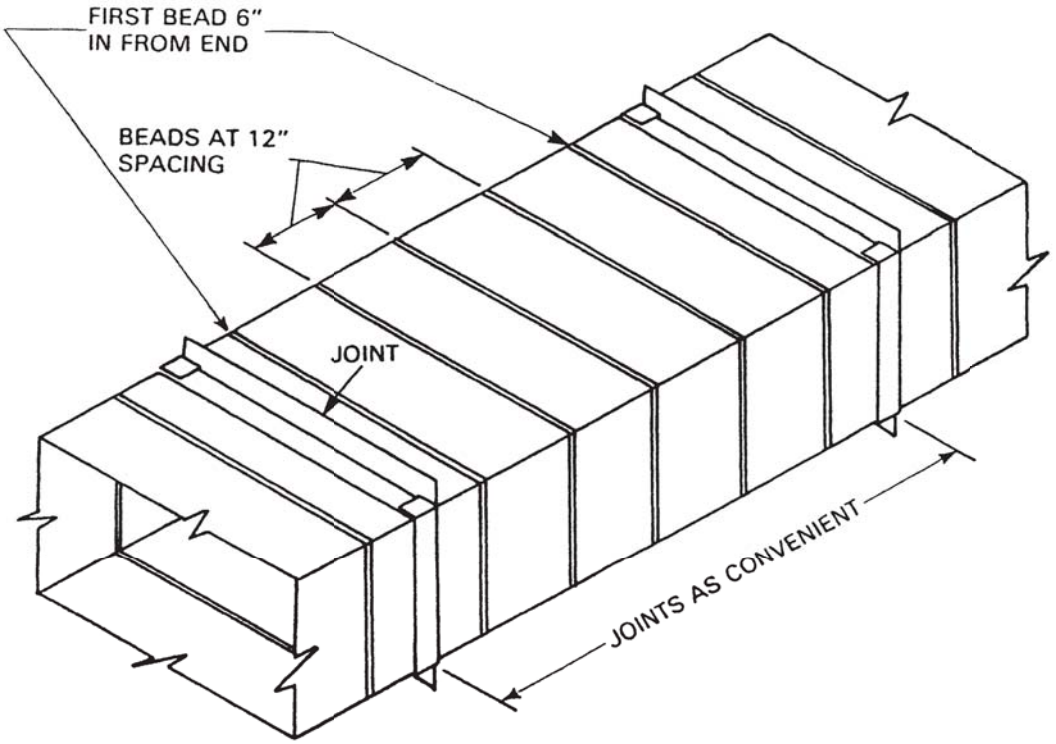
BEADED DUCT

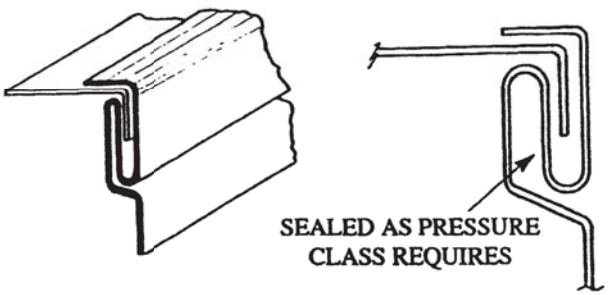


NOTES:

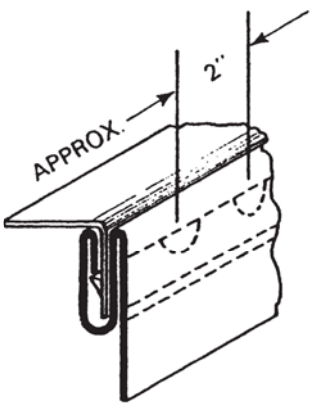
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-75, figure 1-8.

TURNKEY
DUCT SYSTEMS

LONGITUDINAL SEAMS



PITTSBURGH LOCK

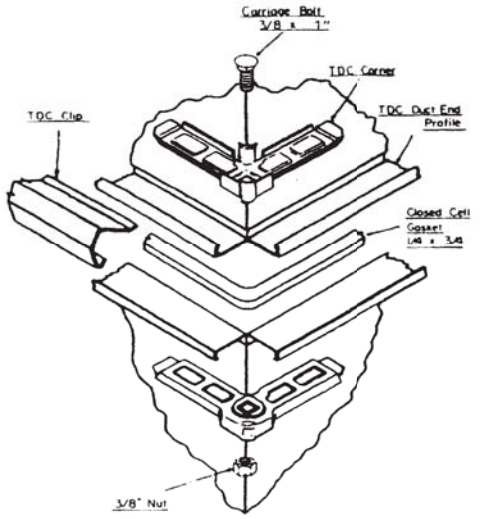


BUTTON PUNCH
SNAP LOCK

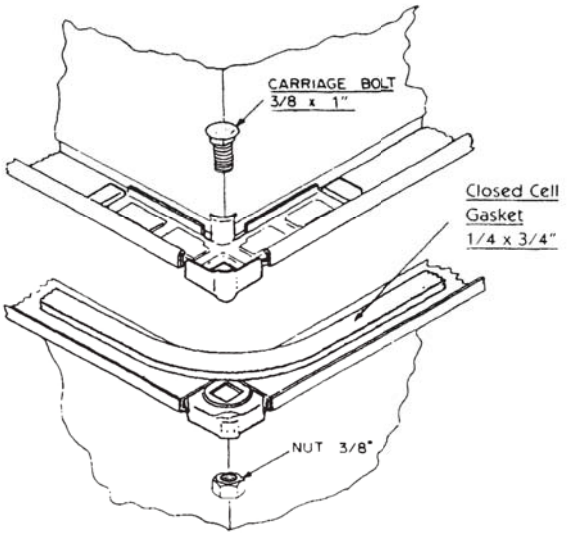
NOTES:

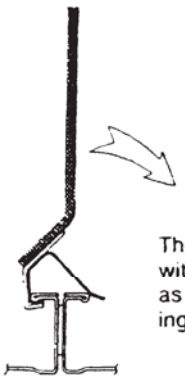
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-67, figure 1-5.

T.D.C. CONNECTORS



CORNER ASSEMBLY



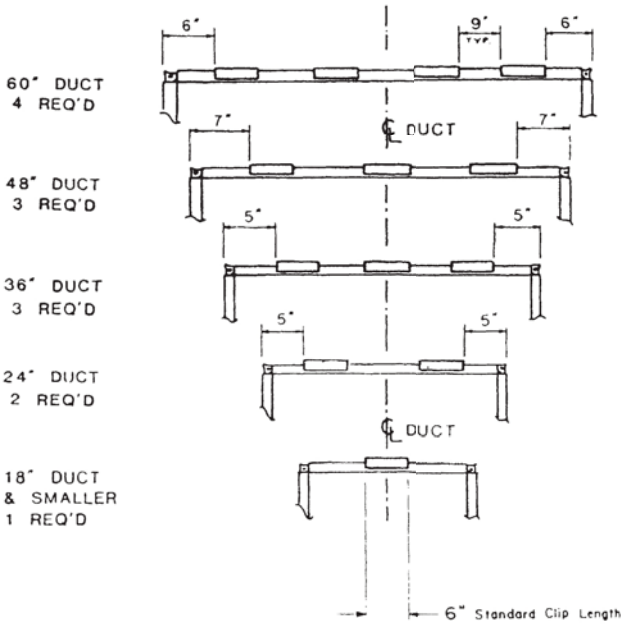


The clamping TDC Clips are installed with 6" wide full coverage TDC Clip tool as shown. For recommended Clip spacing, see Chart

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

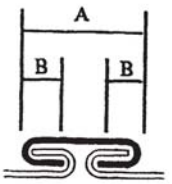
To tighten the grip of the TDC Clip to the flange by overbending the long leg of the Clip, use the forming end of the tool as shown at left.

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



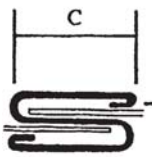
RECOMMENDED CLIP SPACE

TRANSVERSE CONNECTORS



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

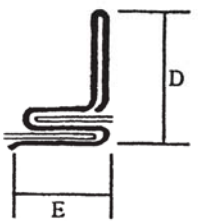
T-1 FLAT DRIVE



C - 1-1/2

3/16" HEM
INSIDE TYPICAL

T-6 FLAT SLIP



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

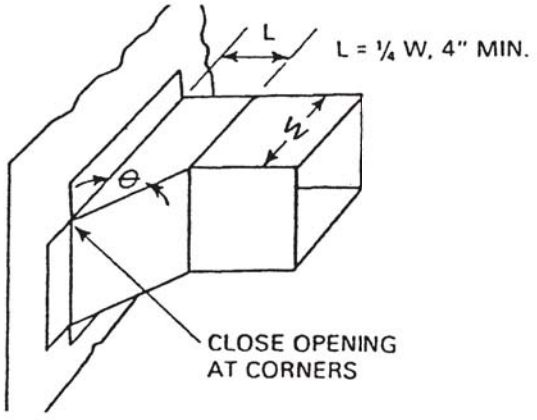
T-11 STANDING SLIP

NOTES:

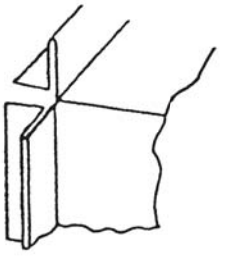
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1-61, figure 1-4.

2) See Duct Construction Tables for limits of application.

BRANCH CONNECTIONS



45 DEGREE ENTRY



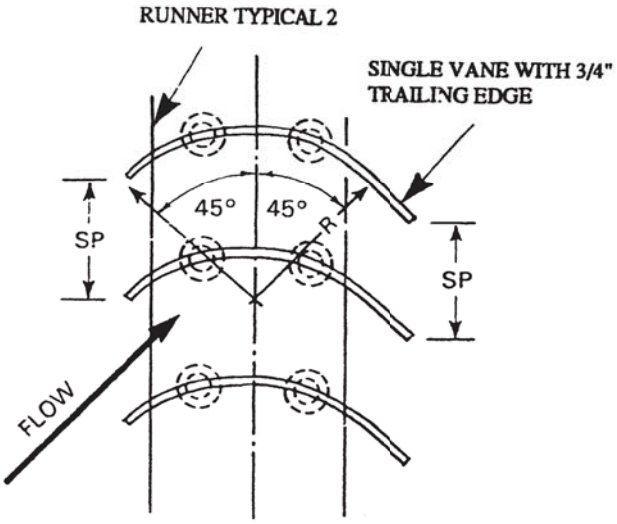
CLINCH LOCK

NOTES:

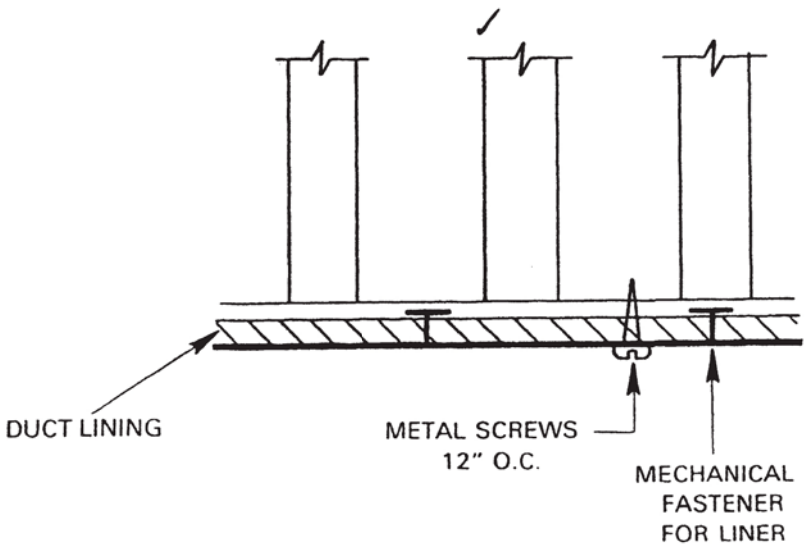
1) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 2-8, figure 2-6.

2) Extractors to be furnished and installed by erectors where specified

SINGLE TURNING VANES



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



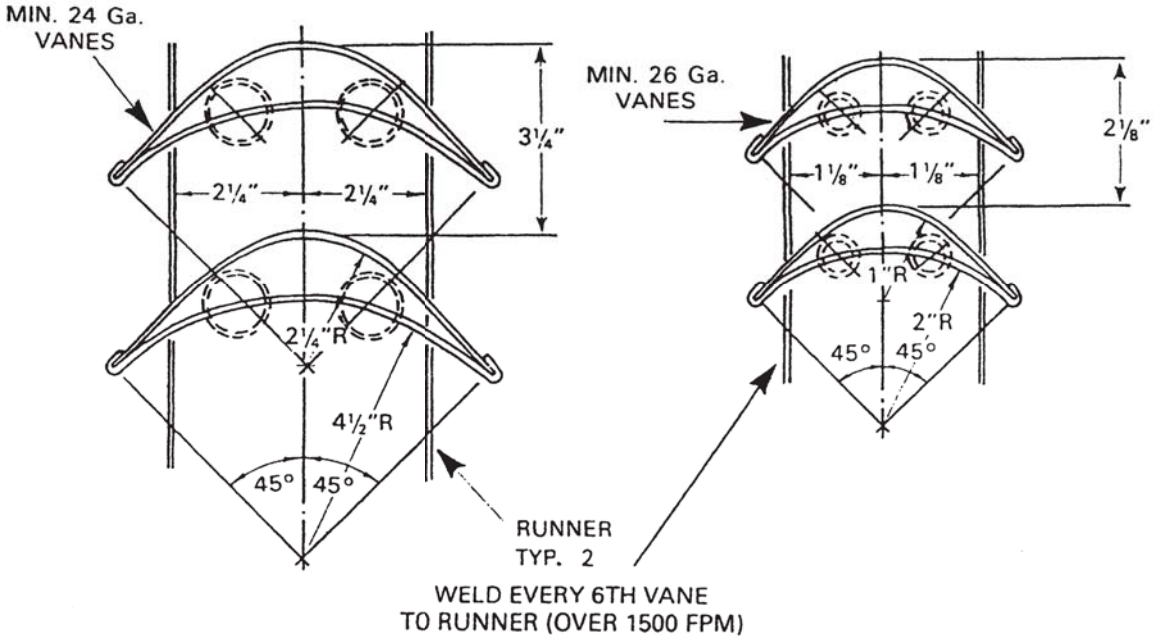
VANE FASTENING DETAIL

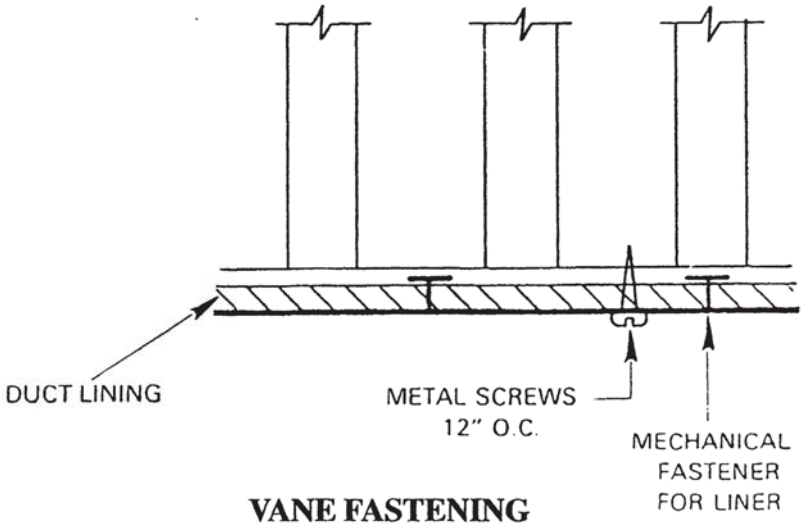
NOTES:

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".

TURNKEY DUCT SYSTEMS

AIR FOIL TURNING VANES





VANE FASTENING DETAIL

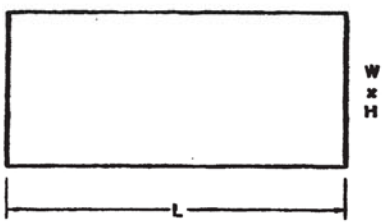
NOTES:

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".

TURNKEY DUCT SYSTEMS

STRAIGHT DUCT

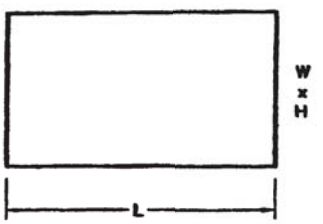
DEFAULT DUCT
STRD



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"

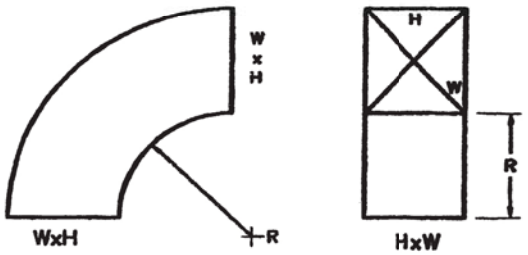
MATERIALS

GALVANIZED
ALUMINUM
PAINTGRIP
STAINLESS STEEL
PVC COATED
CARBON STEEL

TURNKEY DUCT SYSTEMS

ELBOWS

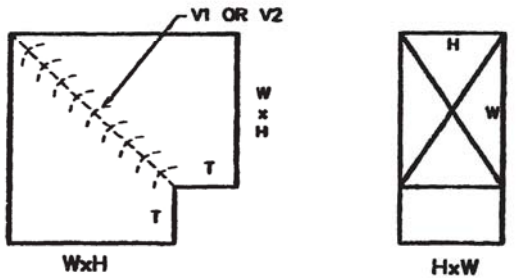
RADUIS ELBOW
ER12
ER(RADIUS)



DIMENSIONAL DATA:

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

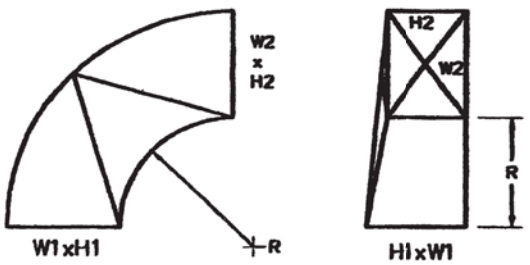
SQUARE ELBOW
ES66
ES(THROATS)



DIMENSIONAL DATA:

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

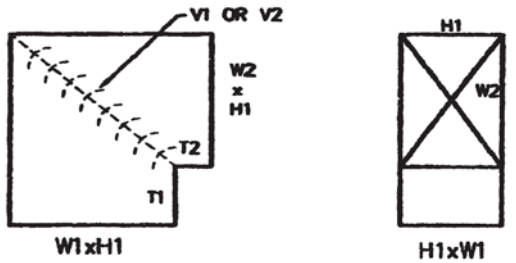
RADIUS ELBOW CUSTOM
ERTC



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



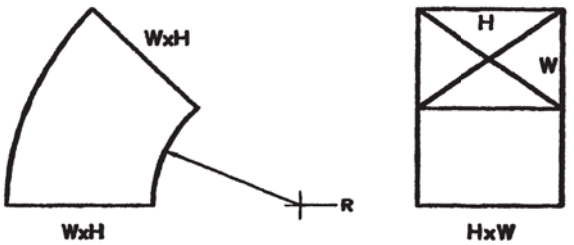
DIMENSIONAL DATA:

- 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

TURNKEY DUCT SYSTEMS

MISC. ELBOWS

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



DIMENSIONAL DATA:

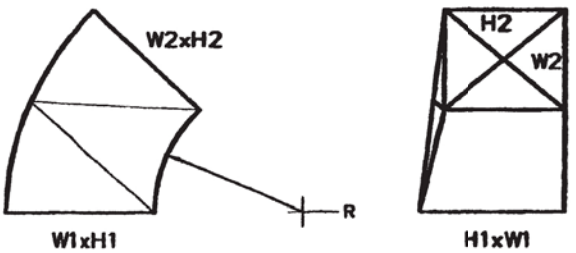
- W = WIDTH
- H = HEIGHT
- R = W

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

DIMENSIONAL DATA:

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

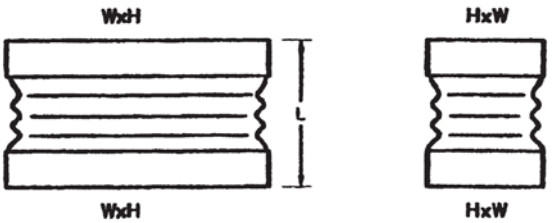
45° CUSTOM ELBOW
4RCE
(ANGLE 4–45° 3–30° 6–60°)RCE



DIMENSIONAL DATA:

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

CANVAS CONNECTION
CCON

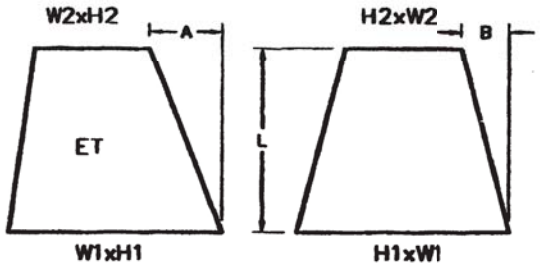


DIMENSIONAL DATA:

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

TRANSITIONS

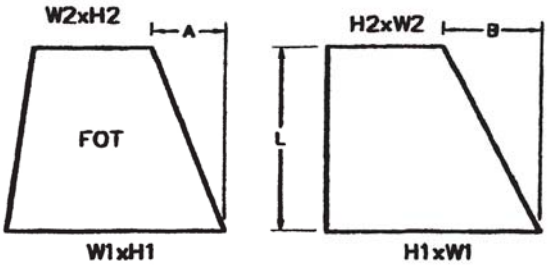
CUSTOM SIDES/ EQUAL TOP
TRCE



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

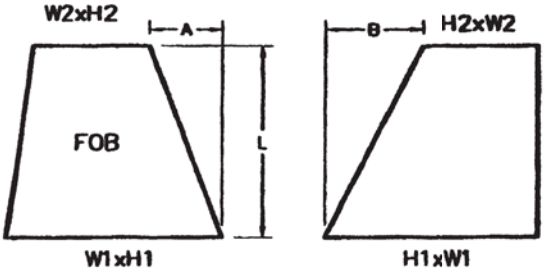
CUSTOM SIDES/ FLAT TOP
TRCT



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)

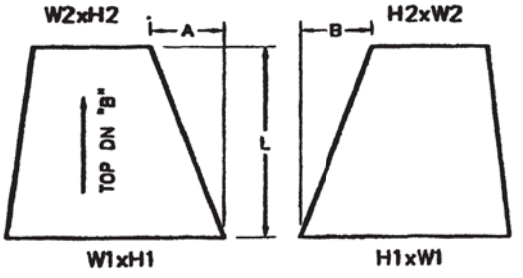
CUSTOM SIDES/ FLAT BOTTOM
TRCB



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



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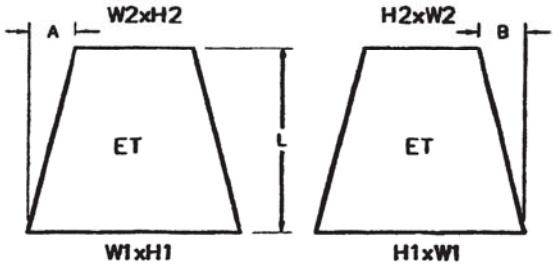
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = CUSTOMER DETERMINED
- B = CUSTOMER DETERMINED

TURNKEY DUCT SYSTEMS

TRANSITIONS

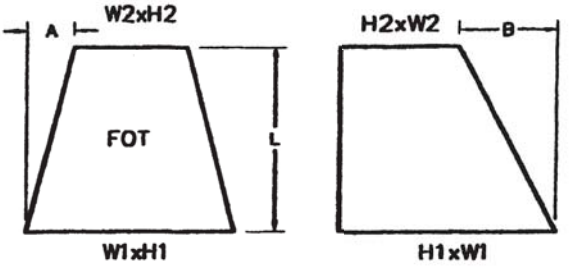
EQUAL SIDES/ EQUAL TOP TREE



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

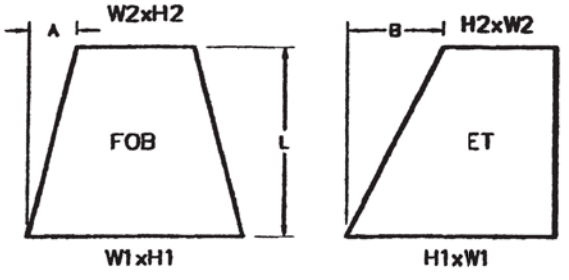
EQUAL SIDES/ FLAT TOP TRET



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



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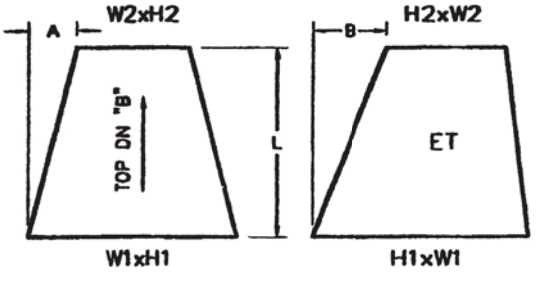
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = (H1−H2)

EQUAL SIDES/ CUSTOM TOP TREC



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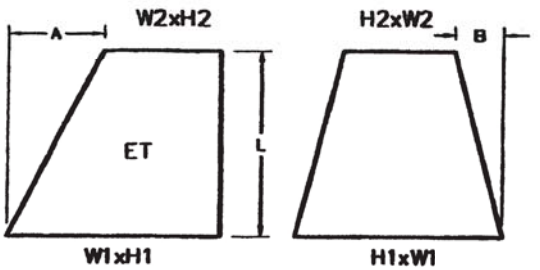
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)/2
- B = CUSTOMER DETERMINED

TURNKEY DUCT SYSTEMS

TRANSITIONS

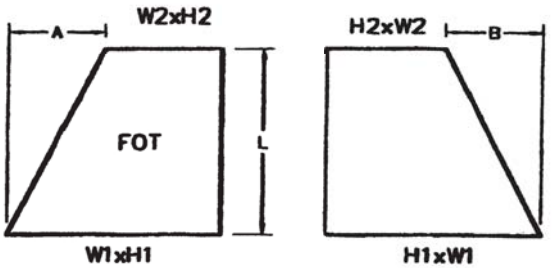
FLAT RIGHT/ EQUAL TOP TRRE



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



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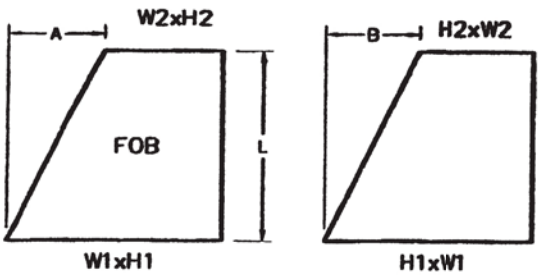
- W2 = WIDTH END TWO
- H1 = HEIGHT END ONE
- H2 = HEIGHT END TWO
- L = LENGTH
- A = (W1−W2)
- B = (H1−H2)

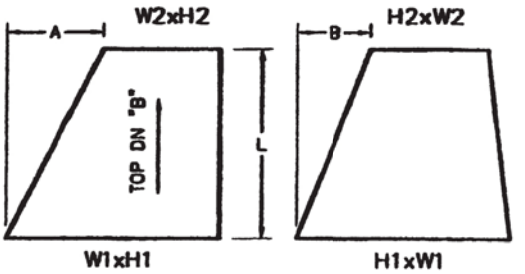
FLAT RIGHT/ FLAT BOTTOM TRRB



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

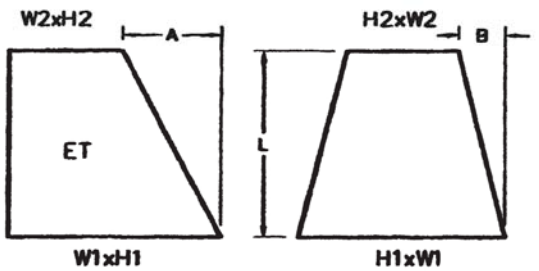


DIMENSIONAL DATA:

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

TRANSITIONS

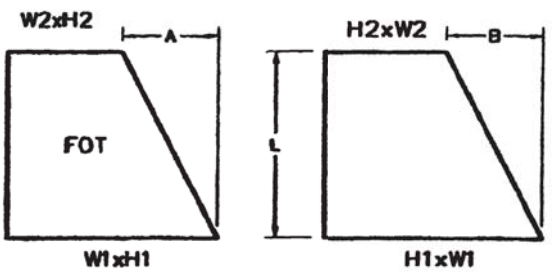
FLAT LEFT/ EQUAL TOP
TRLE



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

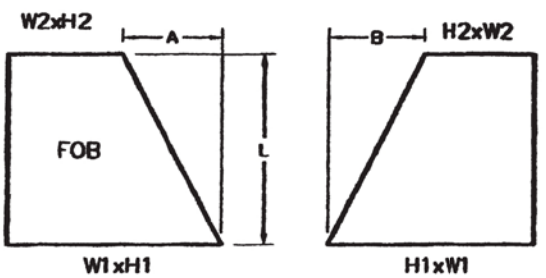
FLAT LEFT/ FLAT TOP
TRLT



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)

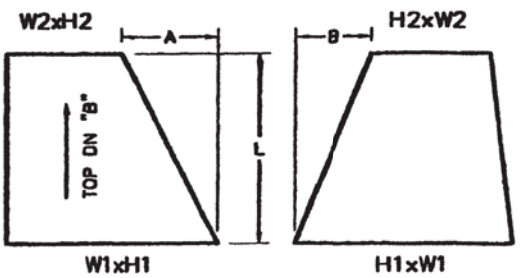
FLAT LEFT/ FLAT BOTTOM
TRLB



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

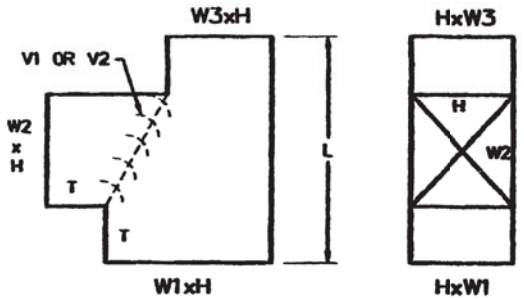


DIMENSIONAL DATA:

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

TEES

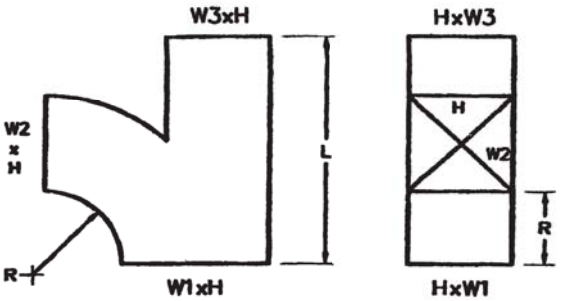
TEE 1 – BRANCH SQUARE TE1S



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

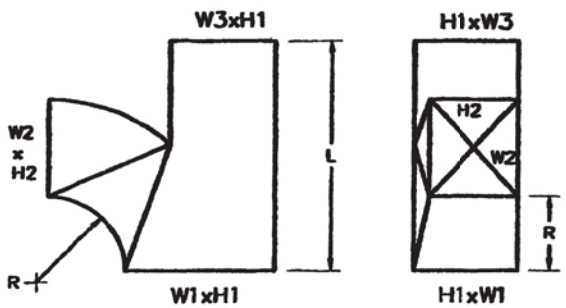
TEE 1 – BRANCH RADIUS TE1R



DIMENSIONAL DATA:

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

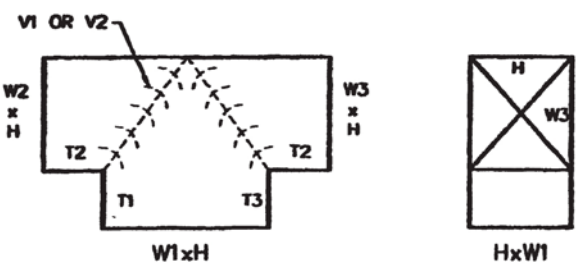
TEE 1–BRANCH RADIUS CUSTOM TE1C



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

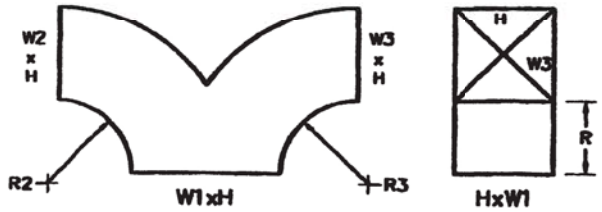


DIMENSIONAL DATA:

- 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

TEES

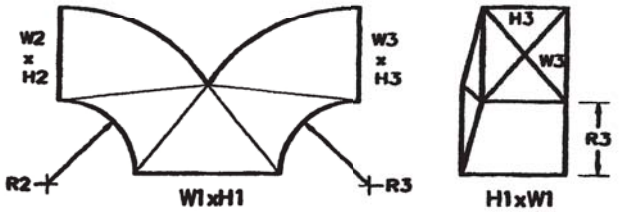
TEE 2 – BRANCH RADIUS TE2R



DIMENSIONAL DATA:

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

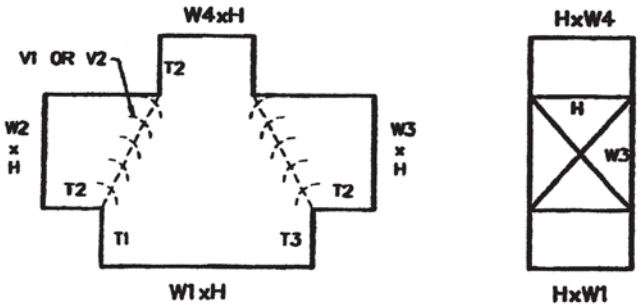
TEE 2 – BRANCH RADIUS CUSTOM TE2C



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

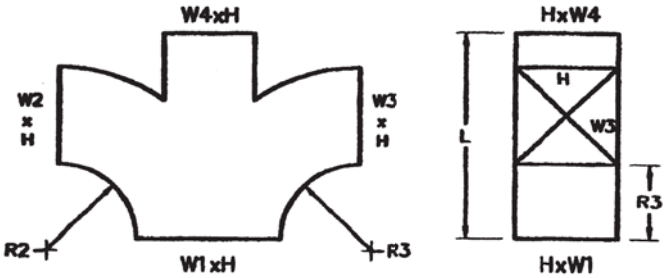
TEE 3 – BRANCH SQUARE TE3S



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

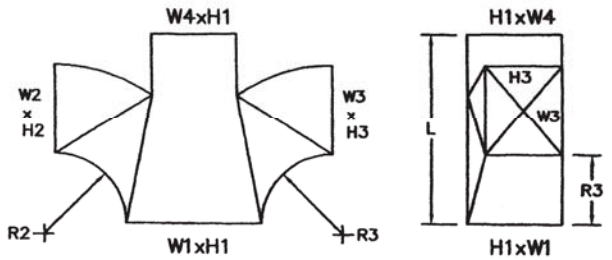


DIMENSIONAL DATA:

- 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

MISC. FITTINGS

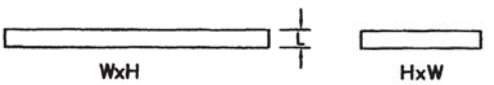
TEE 3 – BRANCH RADIUS CUSTOM
TE3C



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

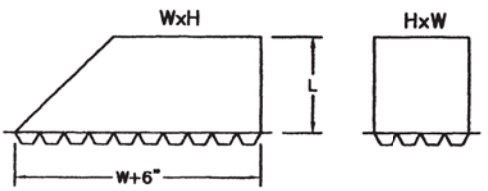
END CAP
ECAP



DIMENSIONAL DATA:

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

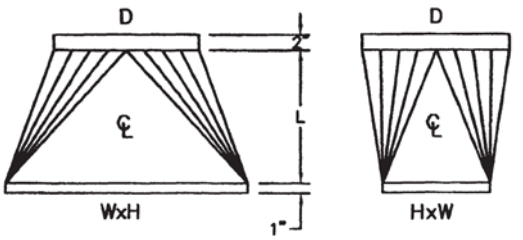
TAKE – OFF
TOFF



DIMENSIONAL DATA:

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

SQUARE TO ROUND
SQRD

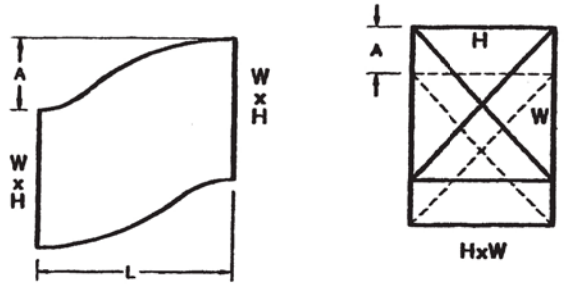


DIMENSIONAL DATA:

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

OFFSETS

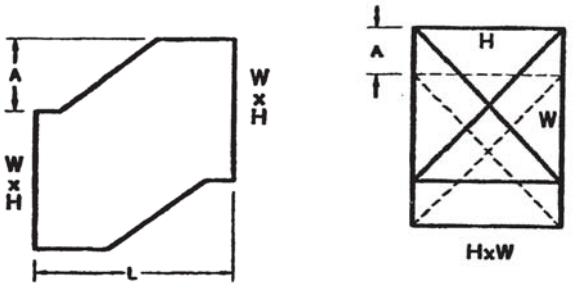
OGEE OFFSET
0015
OO(OFFSET)



DIMENSIONAL DATA:

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

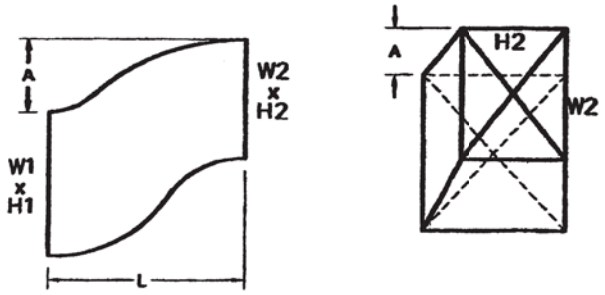
SQUARE OFFSET
OS15
OS(OFFSET)



DIMENSIONAL DATA:

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

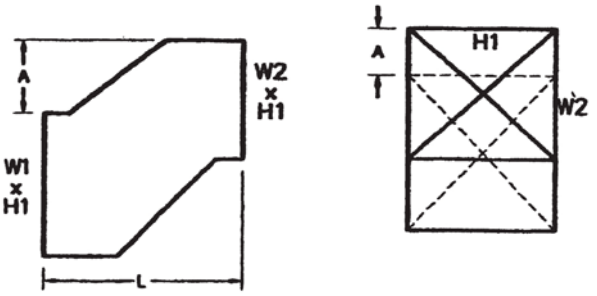
OGEE OFFSET CUSTOM
OOTC



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

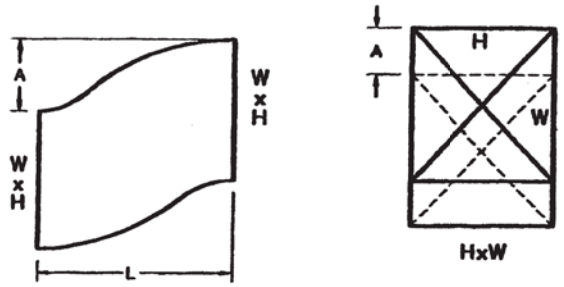


DIMENSIONAL DATA:

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

OFFSETS

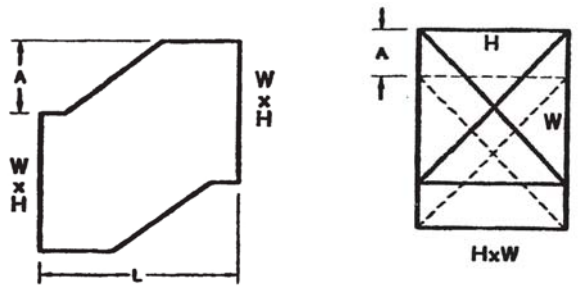
OGEE OFFSET
0015
OO(OFFSET)



DIMENSIONAL DATA:

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

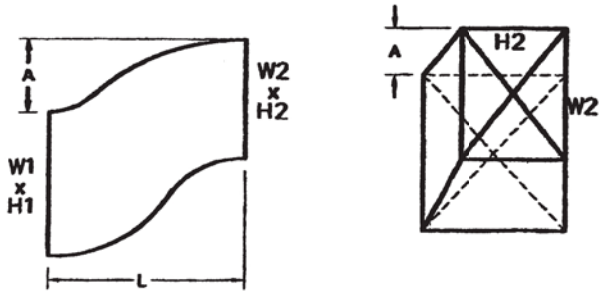
SQUARE OFFSET
OS15
OS(OFFSET)



DIMENSIONAL DATA:

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

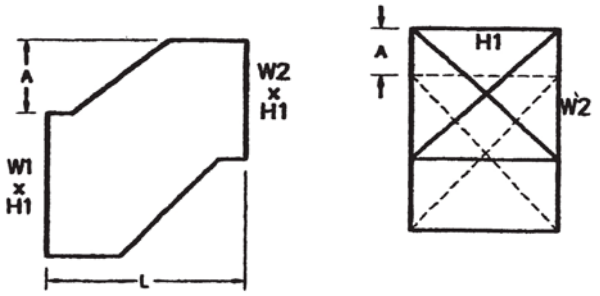
OGEE OFFSET CUSTOM
OOTC



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

TRH 10/22/00