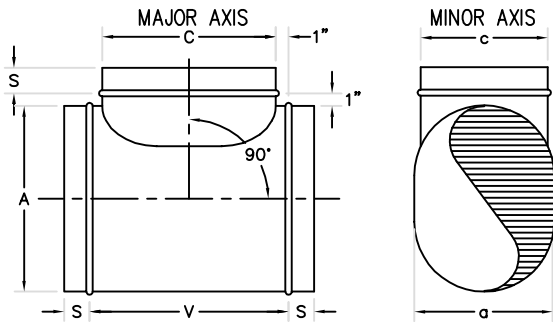


FLAT OVAL
FITTING STANDARDS
SINGLE WALL STRAIGHT TEES

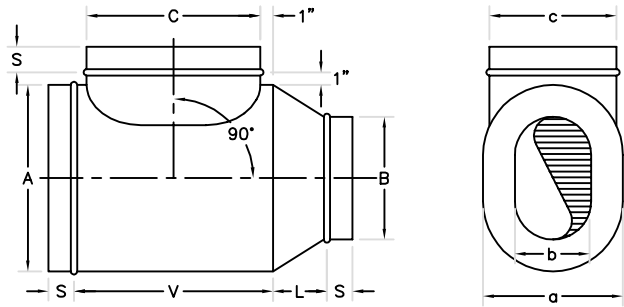
STRAIGHT TEE
OT1



DIMENSIONAL DATA:

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

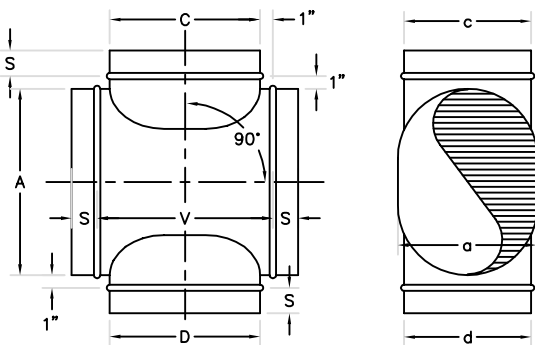
REDUCING TEE
OT1R



DIMENSIONAL DATA:

- S=2"
- V=C + 2"
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

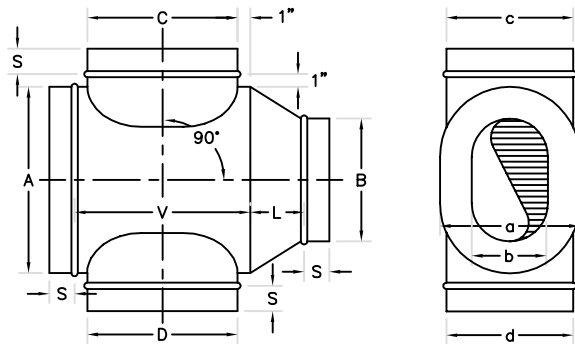
STRAIGHT CROSS
OT2



DIMENSIONAL DATA:

- S=2"
- V=LARGER OF C OR D + 2"

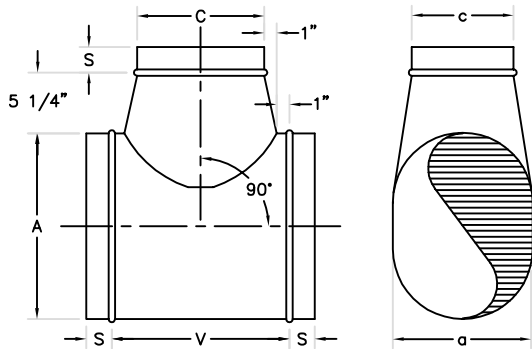
REDUCING CROSS
OT2R



DIMENSIONAL DATA:

- S=2"
- V=LARGER OF C OR D + 2"
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

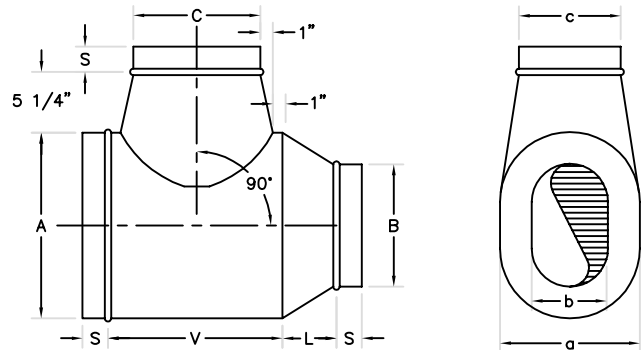
CONICAL TEE
OCT1



DIMENSIONAL DATA:

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

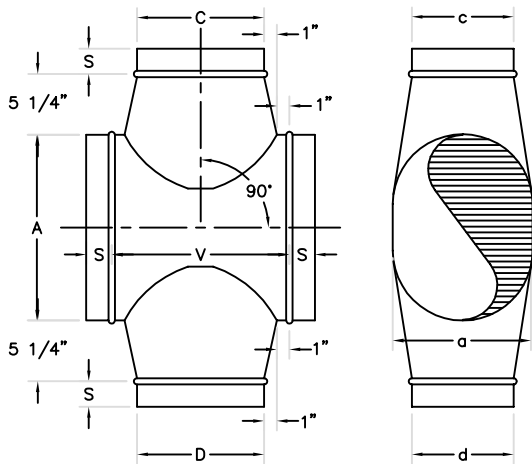
REDUCING CONICAL TEE
OCT1R



DIMENSIONAL DATA:

- S=2"
- V=C + 4"
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

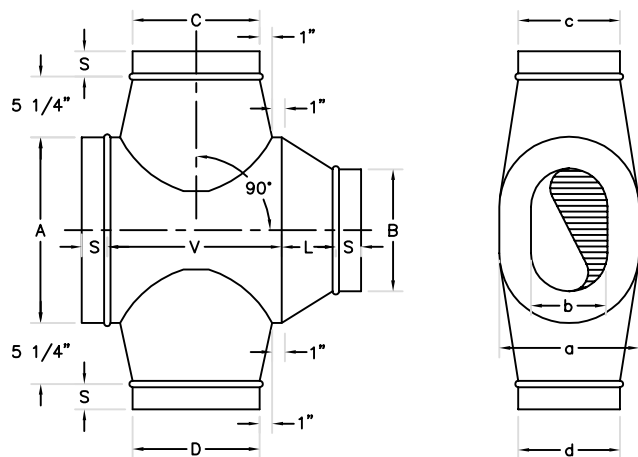
CONICAL CROSS
OCT2



DIMENSIONAL DATA:

- S=2"
- V=LARGER OF C OR D + 4"

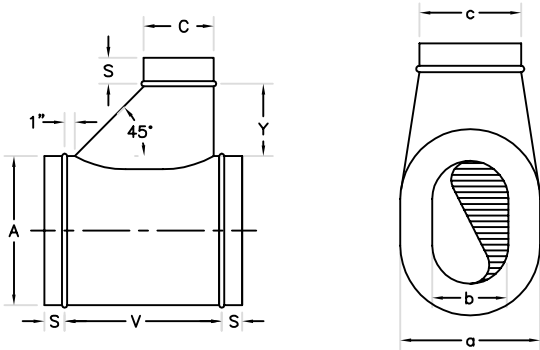
REDUCING CONICAL CROSS
OCT2R



DIMENSIONAL DATA:

- S=2"
- V=LARGER OF C OR D + 4"
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

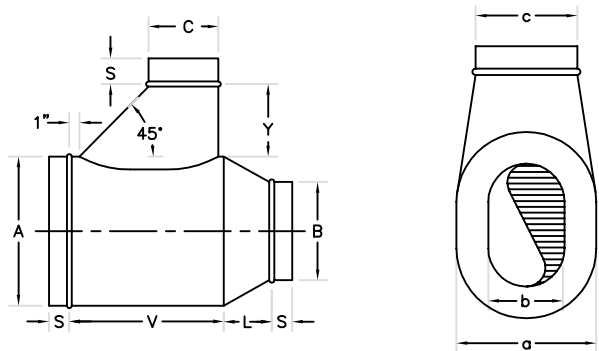
COMBINATION TEE OCMBT1



DIMENSIONAL DATA:

- S=2"
- $V=(C+6)+2$
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"

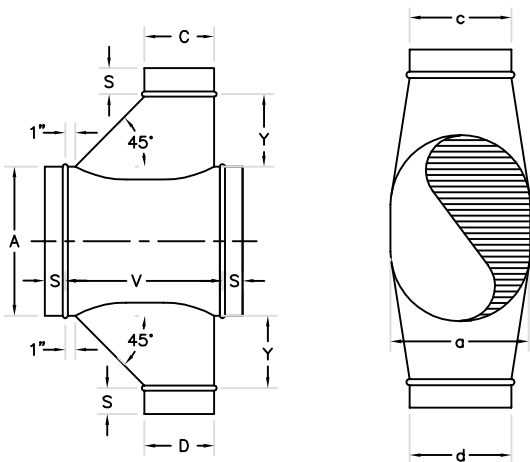
REDUCING COMBINATION TEE OCMBT1R



DIMENSIONAL DATA:

- S=2"
- $V=(C+6)+2$
- L=A-B (4" MIN.-12" MAX.)
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"

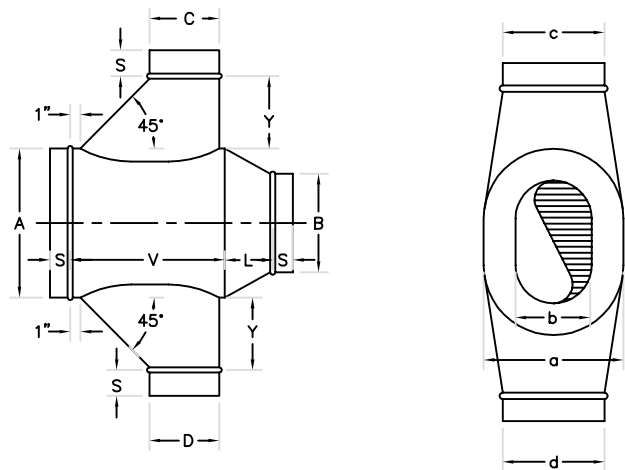
COMBINATION CROSS OCMBT2



DIMENSIONAL DATA:

- S=2"
- $V=(\text{LARGEST TAP}+6)+2$
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"

REDUCING COMBINATION CROSS OCMBT2R

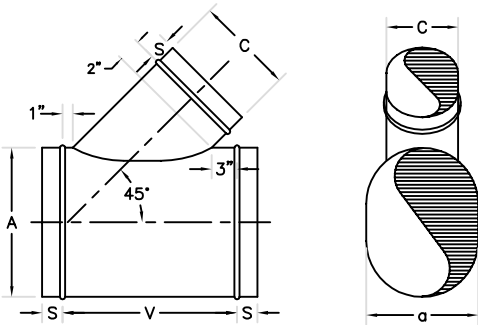


DIMENSIONAL DATA:

- S=2"
- $V=(\text{LARGEST TAP}+6)+2$
- L=A-B (4" MIN.-12" MAX.)
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"

FLAT OVAL FITTING STANDARDS SINGLE WALL LATERALS

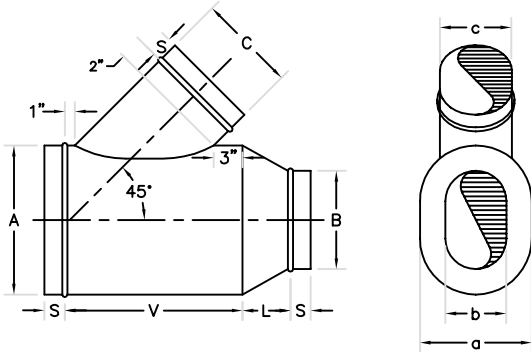
LATERAL OL1



DIMENSIONAL DATA:

- S=2"
- $V=(1.414 \times C)+4"$

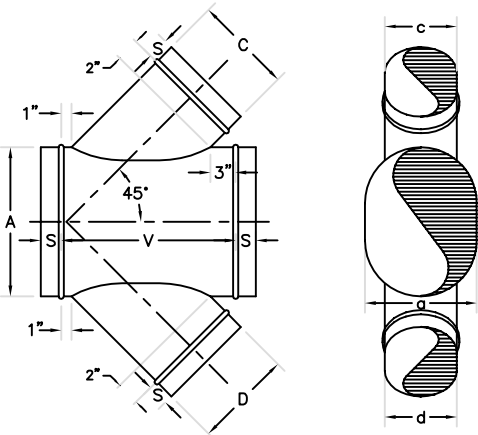
REDUCING LATERAL OL1R



DIMENSIONAL DATA:

- S=2"
- $V=(1.414 \times C)+4"$
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

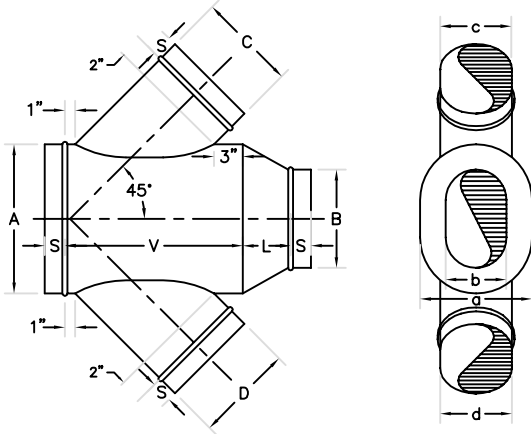
LATERAL CROSS OL2



DIMENSIONAL DATA:

- S=2"
- $V=(1.414 \times C)+4"$

REDUCING LATERAL CROSS OL2R

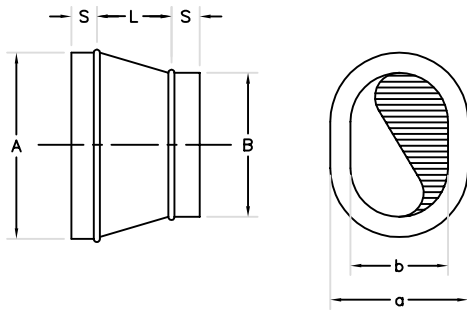


DIMENSIONAL DATA:

- S=2"
- $V=(1.414 \times C)+4"$
- L=12" IF GREATER OF (A-B) OR (a-b) ≤ 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

FLAT OVAL FITTING STANDARDS REDUCER

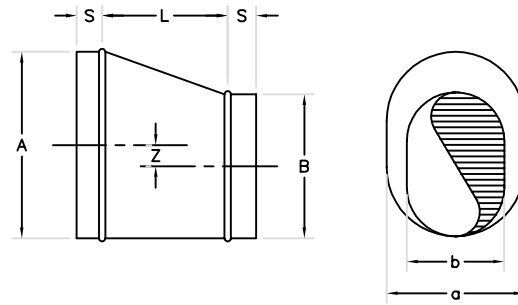
CONCENTRIC REDUCER OR1



DIMENSIONAL DATA:

- S=2"
- L=12" IF GREATER OF (A-B) OR (a-b) < 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16

ECCENTRIC REDUCER OER1

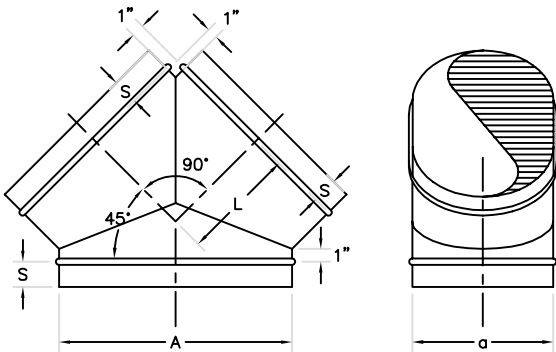


DIMENSIONAL DATA:

- S=2"
- L=12" IF GREATER OF (A-B) OR (a-b) < 16
- L=24" IF GREATER OF (A-B) OR (a-b) > 16
- Z=(A-B)/2

FLAT OVAL FITTING STANDARDS Y-BRANCH

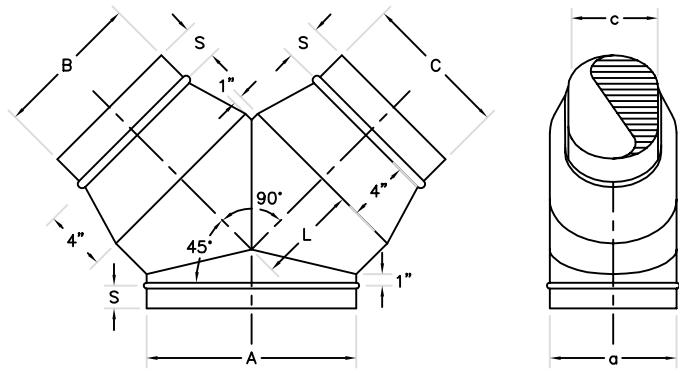
Y-BRANCH
OY2



DIMENSIONAL DATA:

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

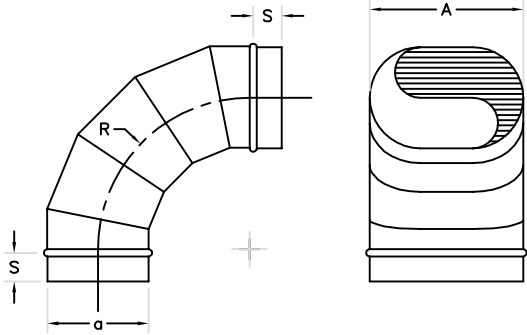
REDUCING Y-BRANCH
OY2R



DIMENSIONAL DATA:

- $S=2"$
- $L=(A/2)+1"$
- $L=12"$ IF GREATER OF $(A-B)$ OR $(a-b) < 16$
- $L=24"$ IF GREATER OF $(A-B)$ OR $(a-b) > 16$

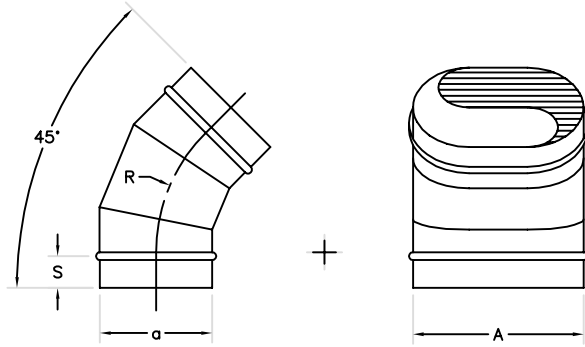
GORED ELBOW
EASY BEND
OEB90
OEB45
OEB(ANGLE)



DIMENSIONAL DATA:

- S=2"
 - R=1.5xa
 - ANY ANGLE
- | |
|------------------|
| 0-35° - 2 PIECE |
| 36-71° - 3 PIECE |
| 72-90° - 5 PIECE |

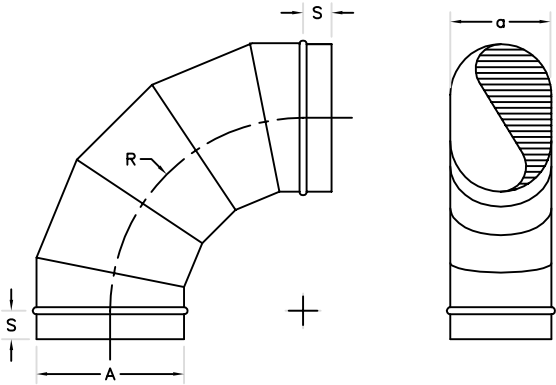
GORED ELBOW
EASY BEND 45°
OEB45



DIMENSIONAL DATA:

- S=2"
- R=1.5xa

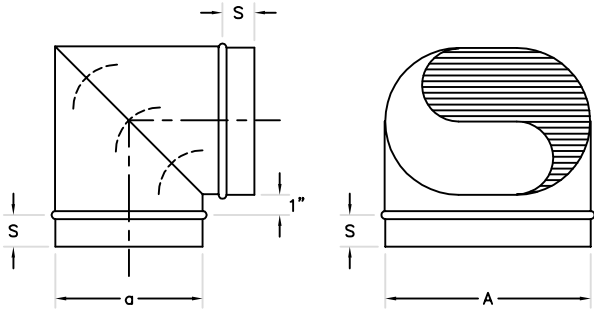
GORED ELBOW
HARD BEND
OHB90
OHB45
OHB(ANGLE)



DIMENSIONAL DATA:

- S=2"
 - R=1.5xA
 - ANY ANGLE
- | |
|------------------|
| 0-35° - 2 PIECE |
| 36-71° - 3 PIECE |
| 72-90° - 5 PIECE |

MITERED 90°
OEBEV90 (EASY BEND) SHOWN
OHBEV90 (HARD BEND)

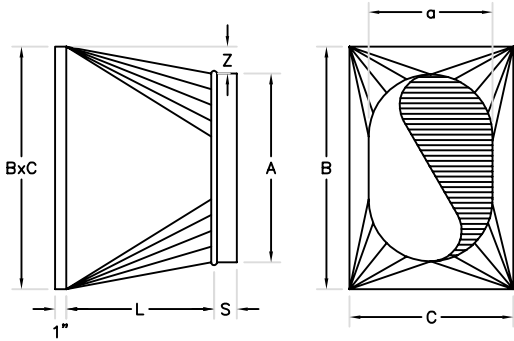


DIMENSIONAL DATA:

- 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 |

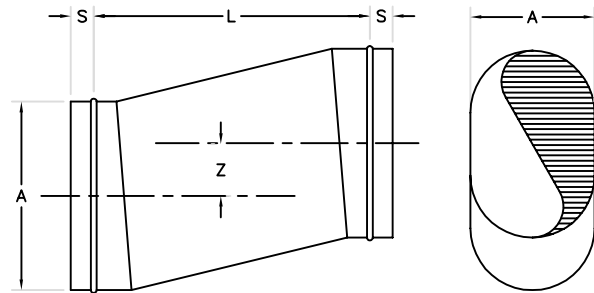
SQUARE TO FLAT OVAL
OSQ



DIMENSIONAL DATA:

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

FLAT OVAL OFFSET
OHBSET (HARD BEND) SHOWN
OEBSET (EASY BEND)

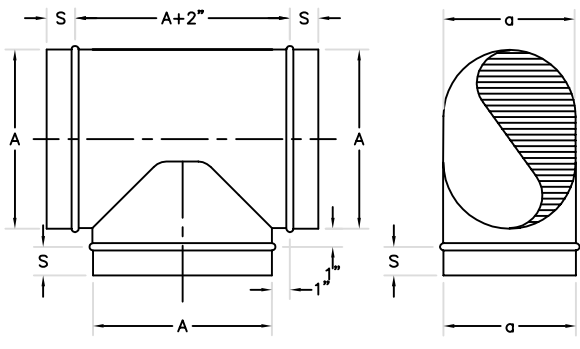


DIMENSIONAL DATA:

- S=2"

FLAT OVAL
FITTING STANDARDS
BULLHEAD TEE

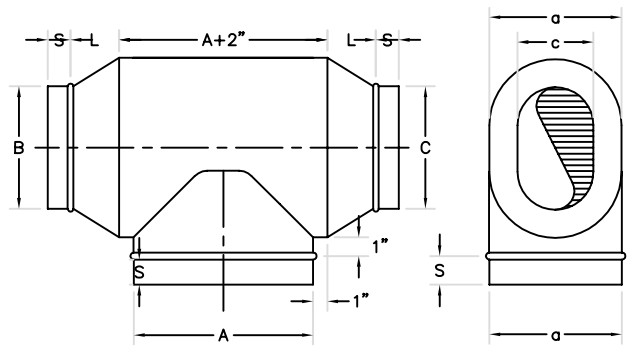
BULLHEAD TEE
OBT



DIMENSIONAL DATA:

- $S=2"$
- WITH OR WITHOUT TURNING VANES

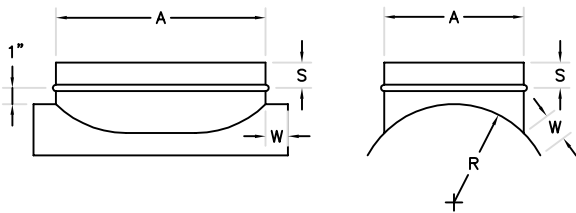
REDUCING BULLHEAD TEE
OBTR



DIMENSIONAL DATA:

- $S=2"$
- WITH OR WITHOUT TURNING VANES
- $L=12"$ IF GREATER OF $(A-B)$ OR $(a-b) \leq 16$
- $L=24"$ IF GREATER OF $(A-B)$ OR $(a-b) > 16$

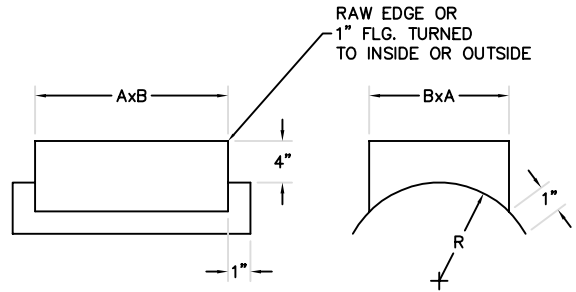
STRAIGHT SADDLE TAP
OTST



DIMENSIONAL DATA:

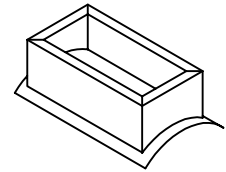
- S=2"
- W=2 1/2"
- R=1/2 DIAMETER

GRILL BOX TAP
OGBST

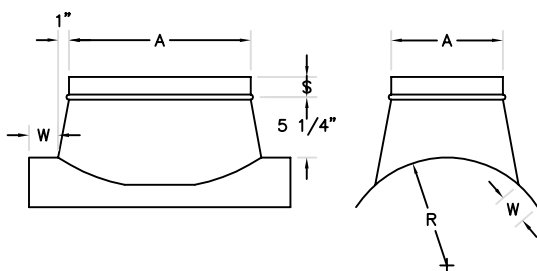


DIMENSIONAL DATA:

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



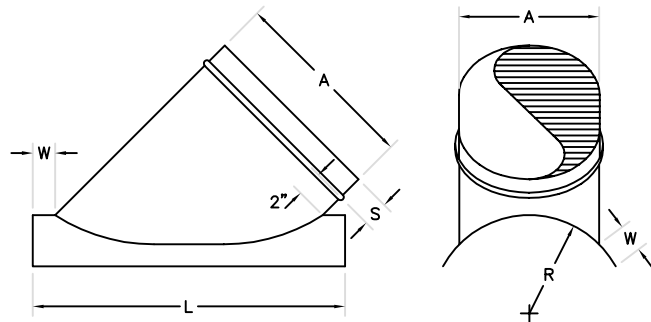
CONICAL SADDLE TAP
OCST



DIMENSIONAL DATA:

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

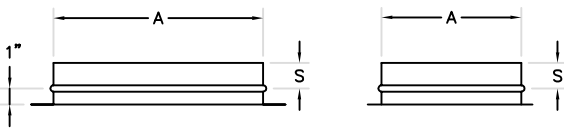
LATERAL SADDLE TAP
OLST



DIMENSIONAL DATA:

- S=2"
- L=(Bx1.414)+2W
- R=1/2 DIAMETER

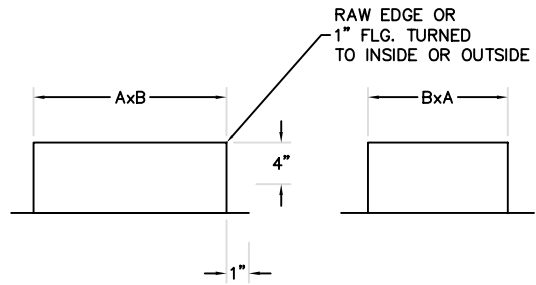
STRAIGHT SADDLE TAP OTST ON FLAT



DIMENSIONAL DATA:

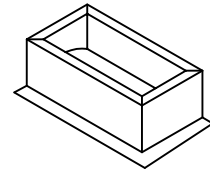
- S=2"
- W=2 1/2"

GRILL BOX TAP OGBST

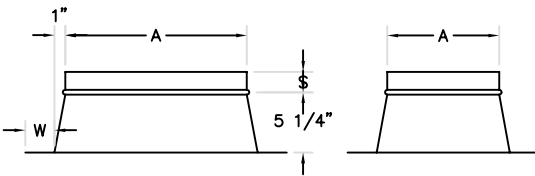


DIMENSIONAL DATA:

- C MUST BE LESS THAN 2A



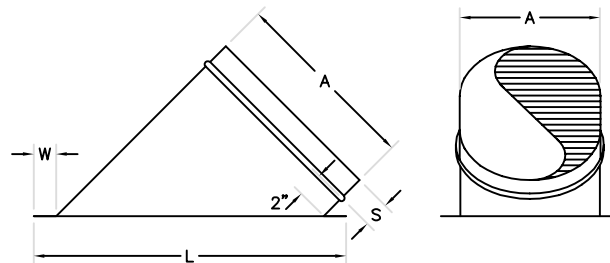
CONICAL SADDLE TAP OCST



DIMENSIONAL DATA:

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

LATERAL SADDLE TAP OLST

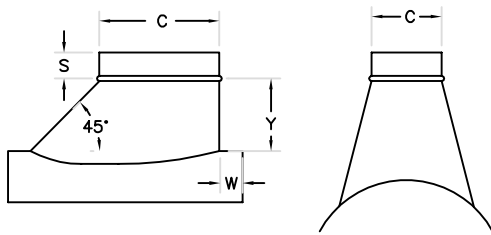


DIMENSIONAL DATA:

- S=2"
- L=(Bx1.414)+2W

FITTING STANDARDS MISC. COMBINATION TAPS

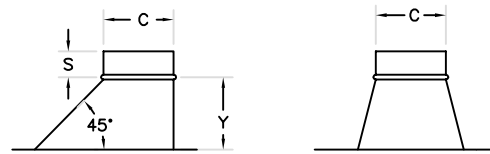
COMBINATION SADDLE OCMBST



DIMENSIONAL DATA:

- S=2"
- $V=(C+6)+2$
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"

COMBINATION SADDLE OCMBST ON FLAT



DIMENSIONAL DATA:

- S=2"
- $V=(C+6)+2$
- C= 3-16 Y=6"
- C= 17-24 Y=9"
- C= 25-UP Y=12"



4"
MINOR
AXIS

**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



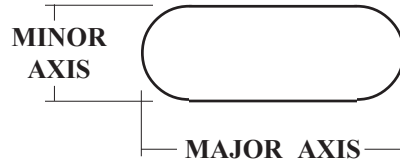
| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 13 | 13.4 | 24 | NR | A5 | A4 | 7.6 | 3.39 |
| 15 | 15.0 | 24 | NR | A5 | A4 | 8.0 | 3.73 |
| 17 | 16.6 | 24 | A8 | A4 | A3 | 8.3 | 4.07 |
| 18 | 18.1 | 24 | A8 | A4 | A3 | 8.7 | 4.41 |
| 20 | 19.7 | 24 | A8 | A4 | B3 | 9.0 | 4.75 |
| 21 | 21.3 | 24 | A8 | B4 | B3 | 9.3 | 5.09 |
| 23 | 22.8 | 24 | A5 | B4 | B3 | 9.6 | 5.43 |
| 24 | 24.4 | 24 | A5 | B4 | B3 | 9.8 | 5.77 |
| 26 | 26.0 | 22 | C8 | C5 | C3 | 10.1 | 7.43 |
| 28 | 27.6 | 22 | C8 | C5 | C3 | 10.3 | 7.85 |
| 29 | 29.1 | 22 | C8 | C4 | D3 | 10.6 | 8.26 |
| 31 | 30.7 | 22 | C5 | D4 | D3 | 10.8 | 8.68 |
| 32 | 32.3 | 22 | C5 | D4 | D3 | 11.0 | 9.09 |
| 34 | 33.8 | 22 | D5 | D4 | D3 | 11.2 | 9.50 |
| 35 | 35.4 | 22 | D5 | E3 | E2.5 | 11.5 | 9.92 |
| 37 | 37.0 | 22 | D5 | E3 | E2.5 | 11.7 | 10.33 |
| 39 | 38.6 | 22 | D5 | E3 | E2.5 | 11.9 | 10.75 |
| 40 | 40.1 | 22 | E5 | E3 | E2.5 | 12.0 | 11.16 |
| 42 | 41.7 | 22 | E5 | E2.5 | F2 | 12.2 | 11.57 |
| 43 | 43.3 | 22 | E5 | E2.5 | F2 | 12.4 | 11.99 |
| 45 | 44.8 | 22 | E5 | E2.5 | F2 | 12.6 | 12.40 |
| 48 | 48.0 | 22 | E4 | G2.5 | G2 | 12.9 | 13.23 |
| 51 | 51.1 | 20 | F5 | G2.5 | G2 | 13.3 | 16.55 |
| 54 | 54.3 | 20 | F4 | H2.5 | H2 | 13.6 | 17.52 |
| 57 | 57.4 | 20 | F4 | H2.5 | H2 | 13.9 | 18.50 |
| 61 | 60.5 | 20 | G4 | H2.5 | I2 | 14.2 | 19.47 |
| 64 | 63.7 | 20 | H3 | H2.5 | I2 | 14.5 | 20.45 |
| 67 | 66.8 | 20 | H3 | I2 | K2 | 14.7 | 21.42 |
| 70 | 70.0 | 20 | H3 | I2 | K2 | 15.0 | 22.40 |
| 73 | 73.1 | 18 | H4 | J2.5 | K2 | 15.3 | 31.04 |
| 76 | 76.3 | 18 | J4 | J2.5 | K2 | 15.5 | 32.33 |
| 79 | 79.4 | 18 | J4 | K2 | NA | 15.8 | 33.62 |
| 83 | 82.5 | 18 | J4 | K2 | NA | 16.0 | 34.92 |
| 86 | 85.7 | 18 | J4 | K2 | NA | 16.2 | 36.21 |
| 89 | 88.8 | 18 | K4 | K2 | NA | 16.5 | 37.51 |
| 92 | 92.0 | 18 | K4 | K2 | NA | 16.7 | 38.80 |

NOTE: Reinforcement is by erector

**6"
MINOR
AXIS**



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 14 | 13.9 | 24 | NR | NR | A5 | 9.5 | 3.73 |
| 15 | 15.4 | 24 | NR | A5 | A4 | 10.0 | 4.07 |
| 17 | 17.0 | 24 | NR | A5 | A4 | 10.5 | 4.41 |
| 19 | 18.6 | 24 | A8 | A4 | A3 | 10.9 | 4.75 |
| 20 | 20.1 | 24 | A8 | A4 | A3 | 11.4 | 5.09 |
| 22 | 21.7 | 24 | A8 | A4 | B3 | 11.8 | 5.43 |
| 23 | 23.3 | 24 | A8 | B4 | B3 | 12.1 | 5.77 |
| 25 | 24.8 | 22 | B8 | B5 | B3 | 12.5 | 7.43 |
| 26 | 26.4 | 22 | B8 | B5 | B3 | 12.8 | 7.85 |
| 28 | 28.0 | 22 | B8 | C5 | C3 | 13.1 | 8.26 |
| 30 | 29.6 | 22 | C8 | C5 | C3 | 13.5 | 8.68 |
| 31 | 31.1 | 22 | C8 | C4 | D3 | 13.8 | 9.09 |
| 33 | 32.7 | 22 | C5 | D4 | D3 | 14.0 | 9.50 |
| 34 | 34.3 | 22 | C5 | D4 | D3 | 14.3 | 9.92 |
| 36 | 35.8 | 22 | C5 | D4 | D3 | 14.6 | 10.33 |
| 37 | 37.4 | 22 | D5 | E3 | E2.5 | 14.9 | 10.75 |
| 39 | 39.0 | 22 | D5 | E3 | E2.5 | 15.1 | 11.16 |
| 41 | 40.6 | 22 | D5 | E3 | E2.5 | 15.4 | 11.57 |
| 42 | 42.1 | 22 | D5 | E3 | E2.5 | 15.6 | 11.99 |
| 44 | 43.7 | 22 | E5 | E2.5 | F2 | 15.9 | 12.40 |
| 47 | 46.8 | 22 | E5 | E2.5 | F2 | 16.3 | 13.23 |
| 50 | 50.0 | 20 | F5 | G2.5 | G2 | 16.8 | 16.55 |
| 53 | 53.1 | 20 | F5 | G2.5 | G2 | 17.2 | 17.52 |
| 56 | 56.3 | 20 | F4 | H2.5 | H2 | 17.6 | 18.50 |
| 59 | 59.4 | 20 | F4 | H2.5 | H2 | 18.0 | 19.47 |
| 63 | 62.5 | 20 | G4 | H2.5 | I2 | 18.3 | 20.45 |
| 66 | 65.7 | 20 | G4 | H2.5 | I2 | 18.7 | 21.42 |
| 69 | 68.8 | 20 | H3 | I2.5 | K2 | 19.1 | 22.40 |
| 72 | 72.0 | 18 | H4 | J2.5 | K2 | 19.4 | 31.04 |
| 75 | 75.1 | 18 | H4 | J2.5 | K2 | 19.7 | 32.33 |
| 78 | 78.3 | 18 | H4 | J2.5 | K2 | 20.1 | 33.62 |
| 81 | 81.4 | 18 | J4 | K2 | NA | 20.4 | 34.92 |
| 85 | 84.5 | 18 | J4 | K2 | NA | 20.7 | 36.21 |
| 88 | 87.7 | 18 | J4 | K2 | NA | 21.0 | 37.51 |
| 91 | 90.8 | 18 | J4 | K2 | NA | 21.3 | 38.80 |

NOTE: Reinforcement is by erector

**8"
MINOR
AXIS**



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 14 | 14.3 | 24 | NR | NR | A5 | 11.2 | 4.07 |
| 16 | 15.9 | 24 | NR | NR | A5 | 11.8 | 4.41 |
| 17 | 17.4 | 24 | NR | A5 | A4 | 12.3 | 4.75 |
| 19 | 19.0 | 24 | NR | A5 | A4 | 12.9 | 5.09 |
| 21 | 20.6 | 24 | A8 | A4 | A3 | 13.4 | 5.43 |
| 22 | 22.1 | 24 | A8 | A4 | A3 | 13.9 | 5.77 |
| 24 | 23.7 | 24 | A8 | A4 | B3 | 14.3 | 6.11 |
| 25 | 25.3 | 22 | A10 | B5 | B3 | 14.7 | 7.85 |
| 27 | 26.8 | 22 | B8 | B5 | B3 | 15.1 | 8.26 |
| 28 | 28.4 | 22 | B8 | B5 | B3 | 15.5 | 8.68 |
| 30 | 30.0 | 22 | B8 | C5 | C3 | 15.9 | 9.09 |
| 32 | 31.6 | 22 | C8 | C5 | C3 | 16.3 | 9.50 |
| 33 | 33.1 | 22 | C8 | C4 | D3 | 16.6 | 9.92 |
| 35 | 34.7 | 22 | C5 | D4 | D3 | 17.0 | 10.33 |
| 36 | 36.3 | 22 | C5 | D4 | D3 | 17.3 | 10.75 |
| 38 | 37.8 | 22 | C5 | D4 | D3 | 17.6 | 11.16 |
| 39 | 39.4 | 22 | D5 | E3 | E2.5 | 17.9 | 11.57 |
| 41 | 41.0 | 22 | D5 | E3 | E2.5 | 18.2 | 11.99 |
| 43 | 42.6 | 22 | D5 | E3 | E2.5 | 18.5 | 12.40 |
| 46 | 45.7 | 22 | E5 | E2.5 | F2 | 19.1 | 13.23 |
| 49 | 48.8 | 20 | E5 | F3 | G2.5 | 19.7 | 16.55 |
| 52 | 52.0 | 20 | F5 | G2.5 | G2 | 20.2 | 17.52 |
| 55 | 55.1 | 20 | F5 | G2.5 | G2 | 20.7 | 18.50 |
| 58 | 58.3 | 20 | F4 | H2.5 | H2 | 21.1 | 19.47 |
| 61 | 61.4 | 20 | F4 | H2.5 | H2 | 21.6 | 20.45 |
| 65 | 64.5 | 20 | G4 | H2.5 | I2 | 22.1 | 21.42 |
| 68 | 67.7 | 20 | G4 | H2.5 | I2 | 22.5 | 22.40 |
| 71 | 70.8 | 18 | H4 | J2.5 | K2 | 22.9 | 31.04 |
| 74 | 74.0 | 18 | H4 | J2.5 | K2 | 23.3 | 32.33 |
| 77 | 77.1 | 18 | H4 | J2.5 | K2 | 23.7 | 33.62 |
| 80 | 80.3 | 18 | H4 | J2.5 | K2 | 24.1 | 34.92 |
| 83 | 83.4 | 18 | J4 | K2 | NA | 24.5 | 36.21 |
| 87 | 86.5 | 18 | J4 | K2 | NA | 24.8 | 37.51 |
| 90 | 89.7 | 18 | J4 | K2 | NA | 25.2 | 38.80 |
| | | | | | | | |
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NOTE: Reinforcement is by erector

**10"
MINOR
AXIS**



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 16 | 16.3 | 24 | NR | NR | A5 | 13.3 | 4.75 |
| 18 | 17.9 | 24 | NR | NR | A5 | 14.0 | 5.09 |
| 19 | 19.4 | 24 | NR | A5 | A4 | 14.6 | 5.43 |
| 21 | 21.0 | 24 | NR | A5 | A4 | 15.2 | 5.77 |
| 23 | 22.6 | 24 | A8 | A4 | A3 | 15.7 | 6.11 |
| 24 | 24.1 | 24 | A8 | A4 | A3 | 16.2 | 6.45 |
| 26 | 25.7 | 22 | A10 | A5 | B4 | 16.7 | 8.26 |
| 27 | 27.3 | 22 | A10 | B5 | B4 | 17.2 | 8.68 |
| 29 | 28.8 | 22 | B8 | B5 | B3 | 17.7 | 9.09 |
| 30 | 30.4 | 22 | B8 | B5 | B3 | 18.1 | 9.50 |
| 32 | 32.0 | 22 | B8 | C5 | C3 | 18.5 | 9.92 |
| 34 | 33.6 | 22 | C8 | C5 | C3 | 18.9 | 10.33 |
| 35 | 35.1 | 22 | C8 | C4 | D3 | 19.3 | 10.75 |
| 37 | 36.7 | 22 | C5 | D4 | D3 | 19.7 | 11.16 |
| 38 | 38.3 | 22 | C5 | D4 | D3 | 20.1 | 11.57 |
| 40 | 39.8 | 22 | C5 | D4 | D3 | 20.4 | 11.99 |
| 41 | 41.4 | 22 | D5 | E3 | E2.5 | 20.8 | 12.40 |
| 45 | 44.6 | 22 | D5 | E3 | E2.5 | 21.5 | 13.23 |
| 48 | 47.7 | 22 | E5 | E2.5 | F2 | 22.1 | 14.06 |
| 51 | 50.8 | 20 | E5 | F3 | G2.5 | 22.7 | 17.52 |
| 54 | 54.0 | 20 | F5 | G2.5 | G2 | 23.3 | 18.50 |
| 57 | 57.1 | 20 | F5 | G2.5 | G2 | 23.9 | 19.47 |
| 60 | 60.3 | 20 | F4 | H2.5 | H2 | 24.4 | 20.45 |
| 63 | 63.4 | 20 | F4 | H2.5 | H2 | 25.0 | 21.42 |
| 67 | 66.5 | 20 | G4 | H2.5 | I2 | 25.5 | 22.40 |
| 70 | 69.7 | 20 | G4 | H2.5 | I2 | 26.0 | 23.37 |
| 73 | 72.8 | 18 | H4 | J2.5 | K2 | 26.4 | 32.33 |
| 76 | 76.0 | 18 | H4 | J2.5 | K2 | 26.9 | 33.62 |
| 79 | 79.1 | 18 | H4 | J2.5 | K2 | 27.3 | 34.92 |
| 82 | 82.3 | 18 | H4 | J2.5 | K2 | 27.8 | 36.21 |
| 85 | 85.4 | 18 | J4 | K2 | NA | 28.2 | 37.51 |
| 89 | 88.5 | 18 | J4 | K2 | NA | 28.6 | 38.80 |
| 92 | 91.7 | 18 | J4 | K2 | NA | 29.0 | 40.09 |
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NOTE: Reinforcement is by erector



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 17 | 16.7 | 24 | NR | NR | A5 | 14.6 | 5.09 |
| 18 | 18.3 | 24 | NR | NR | A5 | 15.4 | 5.43 |
| 20 | 19.9 | 24 | NR | NR | A5 | 16.1 | 5.77 |
| 21 | 21.4 | 24 | NR | A5 | A4 | 16.7 | 6.11 |
| 23 | 23.0 | 24 | NR | A5 | A4 | 17.4 | 6.45 |
| 25 | 24.6 | 22 | NR | A5 | A4 | 18.0 | 8.26 |
| 26 | 26.1 | 22 | NR | A5 | A4 | 18.5 | 8.68 |
| 28 | 27.7 | 22 | A10 | A5 | B4 | 19.1 | 9.09 |
| 29 | 29.3 | 22 | A10 | B5 | B4 | 19.6 | 9.50 |
| 31 | 30.8 | 22 | B8 | B5 | B3 | 20.1 | 9.92 |
| 32 | 32.4 | 22 | B8 | B5 | B3 | 20.6 | 10.33 |
| 34 | 34.0 | 22 | B8 | C5 | C3 | 21.0 | 10.75 |
| 36 | 35.6 | 22 | C8 | C5 | C3 | 21.5 | 11.16 |
| 37 | 37.1 | 22 | C8 | C4 | D3 | 21.9 | 11.57 |
| 39 | 38.7 | 22 | C5 | D4 | D3 | 22.3 | 11.99 |
| 40 | 40.3 | 22 | C5 | D4 | D3 | 22.7 | 12.40 |
| 43 | 43.4 | 22 | D5 | E3 | E2.5 | 23.5 | 13.23 |
| 47 | 46.6 | 22 | D5 | E3 | E2.5 | 24.3 | 14.06 |
| 50 | 49.7 | 20 | E5 | F3 | G2.5 | 25.0 | 17.52 |
| 53 | 52.8 | 20 | E5 | F3 | G2.5 | 25.6 | 18.50 |
| 56 | 56.0 | 20 | F5 | G2.5 | G2 | 26.3 | 19.47 |
| 59 | 59.1 | 20 | F5 | G2.5 | G2 | 26.9 | 20.45 |
| 62 | 62.3 | 20 | F4 | H2.5 | H2 | 27.5 | 21.42 |
| 65 | 65.4 | 20 | F4 | H2.5 | H2 | 28.1 | 22.40 |
| 69 | 68.5 | 20 | G4 | H2.5 | I2 | 28.7 | 23.37 |
| 72 | 71.7 | 18 | H5 | H3 | I2.5 | 29.2 | 32.33 |
| 75 | 74.8 | 18 | H4 | J2.5 | K2 | 29.7 | 33.62 |
| 78 | 78.0 | 18 | H4 | J2.5 | K2 | 30.3 | 34.92 |
| 81 | 81.1 | 18 | H4 | J2.5 | K2 | 30.8 | 36.21 |
| 84 | 84.3 | 18 | J4 | K2 | K2 | 31.2 | 37.51 |
| 87 | 87.4 | 18 | J4 | K2 | NA | 31.7 | 38.80 |
| 91 | 90.5 | 18 | J4 | K2 | NA | 32.2 | 40.09 |
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NOTE: Reinforcement is by erector



SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 19 | 18.7 | 24 | NR | NR | A5 | 16.7 | 5.77 |
| 20 | 20.3 | 24 | NR | NR | A5 | 17.5 | 6.11 |
| 22 | 21.9 | 24 | NR | NR | A5 | 18.2 | 6.45 |
| 23 | 23.4 | 24 | NR | A5 | A5 | 18.9 | 6.79 |
| 25 | 25.0 | 22 | NR | A5 | A5 | 19.5 | 8.68 |
| 27 | 26.6 | 22 | NR | A5 | A4 | 20.2 | 9.09 |
| 28 | 28.1 | 22 | NR | A5 | A4 | 20.8 | 9.50 |
| 30 | 29.7 | 22 | A10 | A5 | B4 | 21.3 | 9.92 |
| 31 | 31.3 | 22 | A10 | B5 | B4 | 21.9 | 10.33 |
| 33 | 32.8 | 22 | B8 | B5 | B3 | 22.4 | 10.75 |
| 34 | 34.4 | 22 | B8 | B5 | B3 | 22.9 | 11.16 |
| 36 | 36.0 | 22 | B8 | C5 | C3 | 23.4 | 11.57 |
| 38 | 37.6 | 22 | C8 | C5 | C3 | 23.9 | 11.99 |
| 39 | 39.1 | 22 | C8 | C4 | D3 | 24.4 | 12.40 |
| 42 | 42.3 | 22 | D5 | D4 | D3 | 25.3 | 13.23 |
| 45 | 45.4 | 22 | D5 | E3 | E2.5 | 26.1 | 14.06 |
| 49 | 48.6 | 20 | D5 | E4 | F3 | 26.9 | 17.52 |
| 52 | 51.7 | 20 | E5 | F3 | G2.5 | 27.7 | 18.50 |
| 55 | 54.8 | 20 | E5 | F3 | G2.5 | 28.4 | 19.47 |
| 58 | 58.0 | 20 | F5 | G2.5 | G2 | 29.1 | 20.45 |
| 61 | 61.1 | 20 | F5 | G2.5 | G2 | 29.8 | 21.42 |
| 64 | 64.3 | 20 | F4 | H2.5 | H2 | 30.5 | 22.40 |
| 67 | 67.4 | 20 | F4 | H2.5 | H2 | 31.1 | 23.37 |
| 71 | 70.5 | 18 | H5 | H3 | I2.5 | 31.7 | 32.33 |
| 74 | 73.7 | 18 | H5 | H3 | I2.5 | 32.3 | 33.62 |
| 77 | 76.8 | 18 | H4 | J2.5 | K2 | 32.9 | 34.92 |
| 80 | 80.0 | 18 | H4 | J2.5 | K2 | 33.4 | 36.21 |
| 83 | 83.1 | 18 | H4 | J2.5 | K2 | 34.0 | 37.51 |
| 86 | 86.3 | 18 | J4 | K2 | K2 | 34.5 | 38.80 |
| 89 | 89.4 | 18 | J4 | K2 | NA | 35.0 | 40.09 |
| 93 | 92.5 | 18 | J4 | K2 | NA | 35.5 | 41.39 |
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NOTE: Reinforcement is by erector

**16"
MINOR
AXIS**



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**

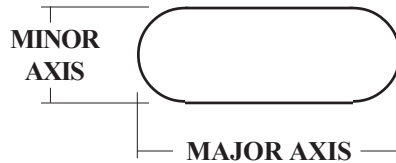


| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 21 | 20.7 | 24 | NR | NR | A5 | 18.7 | 6.45 |
| 22 | 22.3 | 24 | NR | NR | A5 | 19.5 | 6.79 |
| 24 | 23.9 | 24 | NR | NR | A5 | 20.3 | 7.13 |
| 25 | 25.4 | 22 | NR | A5 | A5 | 21.0 | 9.09 |
| 27 | 27.0 | 22 | NR | A5 | A5 | 21.7 | 8.68 |
| 29 | 28.6 | 22 | NR | A5 | A4 | 22.3 | 9.92 |
| 30 | 30.1 | 22 | NR | A5 | A4 | 22.9 | 9.50 |
| 32 | 31.7 | 22 | A10 | A5 | B4 | 23.6 | 10.75 |
| 33 | 33.3 | 22 | A10 | B5 | B4 | 24.1 | 11.16 |
| 35 | 34.8 | 22 | B8 | B5 | B3 | 24.7 | 11.57 |
| 36 | 36.4 | 22 | B8 | B5 | B3 | 25.2 | 11.99 |
| 38 | 38.0 | 22 | B8 | C5 | C3 | 25.8 | 12.40 |
| 41 | 41.1 | 22 | C8 | C4 | D3 | 26.8 | 13.23 |
| 44 | 44.3 | 22 | C5 | D4 | D3 | 27.7 | 14.06 |
| 47 | 47.4 | 22 | D5 | E3 | E2.5 | 28.6 | 14.89 |
| 51 | 50.6 | 20 | D5 | E4 | F3 | 29.5 | 18.50 |
| 54 | 53.7 | 20 | E5 | F3 | G2.5 | 30.3 | 19.47 |
| 57 | 56.8 | 20 | E5 | F3 | G2.5 | 31.1 | 20.45 |
| 60 | 60.0 | 20 | F5 | G2.5 | G2 | 31.8 | 21.42 |
| 63 | 63.1 | 20 | F5 | G2.5 | G2 | 32.6 | 22.40 |
| 66 | 66.3 | 20 | F4 | H2.5 | H2 | 33.3 | 23.37 |
| 69 | 69.4 | 20 | F4 | H2.5 | H2 | 34.0 | 24.35 |
| 73 | 72.5 | 18 | H5 | H3 | I2.5 | 34.6 | 33.62 |
| 76 | 75.7 | 18 | H5 | H3 | I2.5 | 35.3 | 34.92 |
| 79 | 78.8 | 18 | H4 | J2.5 | K2 | 35.9 | 36.21 |
| 82 | 82.0 | 18 | H4 | J2.5 | K2 | 36.5 | 37.51 |
| 85 | 85.1 | 18 | J4 | K2 | K2 | 37.1 | 38.80 |
| 88 | 88.3 | 18 | J4 | K2 | K2 | 37.7 | 40.09 |
| 91 | 91.4 | 18 | J4 | K2 | NA | 38.2 | 41.39 |
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NOTE: Reinforcement is by erector



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------|-------------------|------|-----------------------------------|------|------|------------------|----------------|
| | | | +2" | +6" | +10" | | |
| 21 | 21.1 | 24 | NR | NR | A5 | 19.9 | 6.79 |
| 23 | 22.7 | 24 | NR | NR | A5 | 20.8 | 7.13 |
| 24 | 24.3 | 24 | NR | NR | A5 | 21.6 | 7.47 |
| 26 | 25.9 | 22 | NR | NR | A5 | 22.3 | 9.50 |
| 27 | 27.4 | 22 | NR | A5 | A5 | 23.1 | 9.92 |
| 29 | 29.0 | 22 | NR | A5 | A5 | 23.8 | 10.33 |
| 31 | 30.6 | 22 | NR | A5 | A4 | 24.5 | 10.75 |
| 32 | 32.1 | 22 | NR | A5 | A4 | 25.1 | 11.16 |
| 34 | 33.7 | 22 | A10 | A5 | B4 | 25.7 | 11.57 |
| 35 | 35.3 | 22 | A10 | B5 | B4 | 26.3 | 11.99 |
| 37 | 36.8 | 22 | B8 | B5 | B3 | 26.9 | 12.40 |
| 40 | 40.0 | 22 | B8 | C5 | C3 | 28.1 | 13.23 |
| 43 | 43.1 | 22 | C8 | C4 | D3 | 29.1 | 14.06 |
| 46 | 46.3 | 22 | C5 | D4 | D3 | 30.1 | 14.89 |
| 49 | 49.4 | 20 | D5 | E4 | F3 | 31.1 | 18.50 |
| 53 | 52.6 | 20 | D5 | E4 | F3 | 32.0 | 19.47 |
| 56 | 55.7 | 20 | E5 | F3 | G2.5 | 32.8 | 20.45 |
| 59 | 58.8 | 20 | E5 | F3 | G2.5 | 33.7 | 21.42 |
| 62 | 62.0 | 20 | F5 | G2.5 | G2 | 34.5 | 22.40 |
| 65 | 65.1 | 20 | F5 | G2.5 | G2 | 35.3 | 23.37 |
| 68 | 68.3 | 20 | F4 | H2.5 | H2 | 36.0 | 24.35 |
| 71 | 71.4 | 18 | G5 | H3 | H2.5 | 36.7 | 33.62 |
| 75 | 74.5 | 18 | H5 | H3 | I2.5 | 37.4 | 34.92 |
| 78 | 77.7 | 18 | H5 | H3 | I2.5 | 38.1 | 36.21 |
| 81 | 80.8 | 18 | H4 | J2.5 | K2 | 38.8 | 37.51 |
| 84 | 84.0 | 18 | H4 | J2.5 | K2 | 39.4 | 38.80 |
| 87 | 87.1 | 18 | J4 | K2 | K2 | 40.1 | 40.09 |
| 90 | 90.3 | 18 | J4 | K2 | K2 | 40.7 | 41.39 |
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NOTE: Reinforcement is by erector



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|-------------------|
| | | | +2" | +6" | +10" | | |
| 23 | 23.1 | 24 | NR | NR | A5 | 21.9 | 7.47 |
| 25 | 24.7 | 22 | NR | NR | A5 | 22.8 | 9.50 |
| 26 | 26.3 | 22 | NR | NR | A5 | 23.6 | 9.92 |
| 28 | 27.9 | 22 | NR | NR | A5 | 24.4 | 10.33 |
| 29 | 29.4 | 22 | NR | A5 | A5 | 25.2 | 10.75 |
| 31 | 31.0 | 22 | NR | A5 | A5 | 25.9 | 11.16 |
| 33 | 32.6 | 22 | NR | A5 | A4 | 26.6 | 11.57 |
| 34 | 34.1 | 22 | NR | A5 | A4 | 27.3 | 11.99 |
| 36 | 35.7 | 22 | A10 | A5 | B4 | 27.9 | 12.40 |
| 39 | 38.8 | 22 | B8 | B5 | B3 | 29.1 | 13.23 |
| 42 | 42.0 | 22 | B8 | C5 | C3 | 30.3 | 14.06 |
| 45 | 45.1 | 22 | C8 | C4 | D3 | 31.4 | 14.89 |
| 48 | 48.3 | 22 | C5 | D4 | D3 | 32.5 | 15.71 |
| 51 | 51.4 | 20 | D5 | E4 | F3 | 33.5 | 19.47 |
| 55 | 54.6 | 20 | D5 | E4 | F3 | 34.4 | 20.45 |
| 58 | 57.7 | 20 | E5 | F3 | G2.5 | 35.3 | 21.42 |
| 61 | 60.8 | 20 | E5 | F3 | G2.5 | 36.2 | 22.40 |
| 64 | 64.0 | 20 | F5 | G2.5 | G2 | 37.1 | 23.37 |
| 67 | 67.1 | 20 | F5 | G2.5 | G2 | 37.9 | 24.35 |
| 70 | 70.3 | 20 | F4 | H2.5 | H2 | 38.7 | 25.32 |
| 73 | 73.4 | 18 | G5 | H3 | H2.5 | 39.4 | 34.92 |
| 77 | 76.5 | 18 | H5 | H3 | I2.5 | 40.2 | 36.21 |
| 80 | 79.7 | 18 | H4 | J2.5 | I2.5 | 40.9 | 37.51 |
| 83 | 82.8 | 18 | H4 | J2.5 | K2 | 41.6 | 38.80 |
| 86 | 86.0 | 18 | J4 | K2 | K2 | 42.3 | 40.09 |
| 89 | 89.1 | 18 | J4 | K2 | K2 | 43.0 | 41.39 |
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NOTE: Reinforcement is by erector

22"
MINOR
AXIS



SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------|-------------------|------|-----------------------------------|------|------|------------------|----------------|
| | | | +2" | +6" | +10" | | |
| 25 | 25.1 | 22 | NR | NR | NR | 23.9 | 9.92 |
| 27 | 26.7 | 22 | NR | NR | NR | 24.8 | 10.33 |
| 28 | 28.3 | 22 | NR | NR | NR | 25.6 | 10.75 |
| 30 | 29.9 | 22 | NR | NR | NR | 26.4 | 11.16 |
| 31 | 31.4 | 22 | NR | A5 | A5 | 27.2 | 11.57 |
| 33 | 33.0 | 22 | NR | A5 | A5 | 28.0 | 11.99 |
| 35 | 34.6 | 22 | NR | A5 | A4 | 28.7 | 12.40 |
| 38 | 37.7 | 22 | A10 | A5 | B4 | 30.0 | 13.23 |
| 41 | 40.8 | 22 | B8 | B5 | B3 | 31.3 | 14.06 |
| 44 | 44.0 | 22 | B8 | C5 | C3 | 32.5 | 14.89 |
| 47 | 47.1 | 22 | C8 | C4 | D3 | 33.7 | 15.71 |
| 50 | 50.3 | 20 | C8 | D4 | D4 | 34.8 | 19.47 |
| 53 | 53.4 | 20 | D5 | E4 | F3 | 35.8 | 20.45 |
| 57 | 56.6 | 20 | D5 | E4 | F3 | 36.8 | 21.42 |
| 60 | 59.7 | 20 | E5 | F3 | G2.5 | 37.8 | 22.40 |
| 63 | 62.8 | 20 | E5 | F3 | G2.5 | 38.7 | 23.37 |
| 66 | 66.0 | 20 | F5 | G2.5 | G2 | 39.6 | 24.35 |
| 69 | 69.1 | 20 | F5 | G2.5 | G2 | 40.4 | 25.32 |
| 72 | 72.3 | 18 | G5 | H3 | H2.5 | 41.3 | 34.92 |
| 75 | 75.4 | 18 | G5 | H3 | H2.5 | 42.1 | 36.21 |
| 79 | 78.5 | 18 | H5 | H3 | I2.5 | 42.8 | 37.51 |
| 82 | 81.7 | 18 | H5 | H3 | I2.5 | 43.6 | 38.80 |
| 85 | 84.8 | 18 | H4 | J2.5 | K2 | 44.3 | 40.09 |
| 88 | 88.0 | 18 | H4 | J2.5 | K2 | 45.1 | 41.39 |
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NOTE: Reinforcement is by erector

24"
MINOR
AXIS



SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)

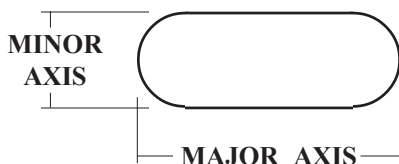


| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PER FT. |
|--------------------|-------------------|------|-----------------------------------|------|------|------------------|----------------|
| | | | +2" | +6" | +10" | | |
| 27 | 27.1 | 22 | NR | NR | NR | 25.9 | 10.75 |
| 29 | 28.7 | 22 | NR | NR | NR | 26.8 | 11.16 |
| 30 | 30.3 | 22 | NR | NR | NR | 27.7 | 11.57 |
| 32 | 31.9 | 22 | NR | NR | NR | 28.5 | 11.99 |
| 33 | 33.4 | 22 | NR | A5 | A5 | 29.3 | 12.40 |
| 37 | 36.6 | 22 | NR | A5 | A4 | 30.8 | 13.23 |
| 40 | 39.7 | 22 | A10 | A5 | B4 | 32.2 | 14.06 |
| 43 | 42.8 | 22 | B8 | B5 | B3 | 33.5 | 14.89 |
| 46 | 46.0 | 22 | B8 | C5 | C3 | 34.7 | 15.71 |
| 49 | 49.1 | 20 | C10 | D5 | D4 | 35.9 | 19.47 |
| 52 | 52.3 | 20 | C8 | D4 | D4 | 37.0 | 20.45 |
| 55 | 55.4 | 20 | D5 | E4 | F3 | 38.1 | 21.42 |
| 59 | 58.6 | 20 | D5 | E4 | F3 | 39.2 | 22.40 |
| 62 | 61.7 | 20 | E5 | F3 | G2.5 | 40.1 | 23.37 |
| 65 | 64.8 | 20 | E5 | F3 | G2.5 | 41.1 | 24.35 |
| 68 | 68.0 | 20 | F5 | G2.5 | G2 | 42.0 | 25.32 |
| 71 | 71.1 | 18 | F5 | H3 | H2.5 | 42.9 | 34.92 |
| 74 | 74.3 | 18 | G5 | H3 | H2.5 | 43.8 | 36.21 |
| 77 | 77.4 | 18 | G5 | H3 | H2.5 | 44.6 | 37.51 |
| 81 | 80.5 | 18 | H5 | H3 | I2.5 | 45.4 | 38.80 |
| 84 | 83.7 | 18 | H4 | J2.5 | K2 | 46.2 | 40.09 |
| 87 | 86.8 | 18 | H4 | J2.5 | K2 | 47.0 | 41.39 |
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NOTE: Reinforcement is by erector



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



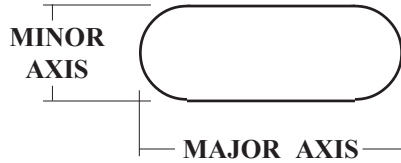
| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PERFT. |
|--------------------------|-------------------------|------|-----------------------------------|------|------|---------------------|------------------|
| | | | +2" | +6" | +10" | | |
| 35 | 35.4 | 22 | NR | A5 | A5 | 31.3 | 13.23 |
| 39 | 38.6 | 22 | NR | A5 | A4 | 32.8 | 14.06 |
| 42 | 41.7 | 22 | A10 | A5 | B4 | 34.3 | 14.89 |
| 45 | 44.8 | 22 | B8 | B5 | B3 | 35.6 | 15.71 |
| 48 | 48.0 | 20 | B8 | C5 | C3 | 36.9 | 16.54 |
| 51 | 51.1 | 20 | C8 | D5 | D4 | 38.1 | 20.45 |
| 54 | 54.3 | 20 | C8 | D4 | D4 | 39.3 | 21.42 |
| 57 | 57.4 | 20 | D5 | E4 | F3 | 40.4 | 22.40 |
| 61 | 60.6 | 20 | D5 | E4 | F3 | 41.5 | 23.37 |
| 64 | 63.7 | 20 | E5 | F3 | G2.5 | 42.5 | 24.35 |
| 67 | 66.8 | 20 | E5 | F3 | G2.5 | 43.5 | 25.32 |
| 70 | 70.0 | 20 | F5 | G2.5 | G2 | 44.4 | 26.29 |
| 73 | 73.1 | 18 | F5 | G2.5 | H2.5 | 45.4 | 36.21 |
| 76 | 76.4 | 18 | G5 | H3 | H2.5 | 46.3 | 37.51 |
| 79 | 79.4 | 18 | G5 | H3 | H2.5 | 47.2 | 38.80 |
| 83 | 82.5 | 18 | H5 | H3 | I2.5 | 48.0 | 40.09 |
| 86 | 85.7 | 18 | H4 | J2.5 | K2 | 48.8 | 41.39 |
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NOTE: Reinforcement is by erector



28"
MINOR
AXIS

SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)



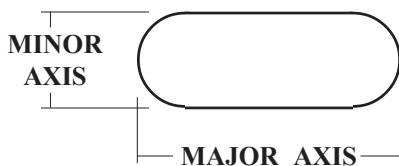
| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PERFT. |
|--------------------|-------------------|------|-----------------------------------|-----|------|------------------|---------------|
| | | | +2" | +6" | +10" | | |
| 37 | 37.4 | 22 | NR | A5 | A5 | 33.4 | 14.06 |
| 41 | 40.6 | 22 | NR | A5 | A5 | 34.9 | 14.89 |
| 44 | 43.7 | 22 | A10 | A5 | B5 | 36.4 | 15.71 |
| 47 | 46.8 | 22 | B8 | B5 | C4 | 37.8 | 16.54 |
| 50 | 50.0 | 20 | B8 | C5 | C4 | 39.1 | 20.45 |
| 53 | 53.1 | 20 | C8 | D5 | D4 | 40.3 | 21.42 |
| 56 | 56.3 | 20 | C8 | D4 | D4 | 41.5 | 22.40 |
| 59 | 59.4 | 20 | D5 | E4 | F3 | 42.7 | 23.37 |
| 63 | 62.6 | 20 | D5 | E4 | F3 | 43.8 | 24.35 |
| 66 | 65.7 | 20 | E5 | F3 | G2.5 | 44.8 | 25.32 |
| 69 | 68.8 | 20 | E5 | F3 | G3 | 45.8 | 26.29 |
| 72 | 72.0 | 18 | F5 | H4 | H3 | 46.8 | 36.21 |
| 75 | 75.1 | 18 | F5 | H4 | H3 | 47.8 | 37.51 |
| 78 | 78.3 | 18 | G5 | I4 | I3 | 48.7 | 38.80 |
| 81 | 81.4 | 18 | G5 | I4 | I3 | 49.6 | 40.09 |
| 85 | 84.5 | 18 | H5 | J4 | J3 | 50.5 | 41.39 |
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NOTE: Reinforcement is by erector

30"
MINOR
AXIS



**SHOP STANDARDS
FLAT OVAL DUCT CONSTRUCTION TABLE
(NOT FOR ALUMINUM)**



| NOMINAL MAJOR AXIS | ACTUAL MAJOR AXIS | GAGE | REINFORCEMENT PER STATIC PRESSURE | | | ROUND EQUIVALENT | POUNDS PERFT. |
|--------------------------|-------------------------|------|-----------------------------------|-----|------|---------------------|------------------|
| | | | +2" | +6" | +10" | | |
| 39 | 39.4 | 22 | NR | A5 | A5 | 35.4 | 14.89 |
| 43 | 42.6 | 22 | NR | A5 | A5 | 37.0 | 15.71 |
| 46 | 45.7 | 22 | A10 | A5 | B5 | 38.5 | 16.54 |
| 49 | 48.8 | 20 | B10 | B5 | C4 | 39.9 | 20.45 |
| 52 | 52.0 | 20 | B10 | C5 | C4 | 41.2 | 21.42 |
| 55 | 55.1 | 20 | C10 | D5 | D4 | 42.5 | 22.40 |
| 58 | 58.3 | 20 | C8 | D5 | D4 | 43.7 | 23.37 |
| 61 | 61.4 | 20 | D5 | E4 | F3 | 44.9 | 24.35 |
| 65 | 64.6 | 20 | D5 | E4 | F3 | 46.0 | 25.32 |
| 68 | 67.7 | 20 | E5 | F3 | F3 | 47.1 | 34.92 |
| 71 | 70.8 | 18 | E5 | G4 | G3 | 48.2 | 36.21 |
| 74 | 74.0 | 18 | F5 | H4 | H3 | 49.2 | 37.51 |
| 77 | 77.1 | 18 | F5 | H4 | H3 | 50.2 | 38.80 |
| 80 | 80.3 | 18 | G5 | H3 | H2.5 | 51.1 | 40.09 |
| 83 | 83.4 | 18 | G5 | H3 | H2.5 | 52.1 | 41.39 |
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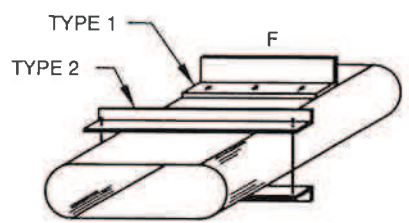
NOTE: Reinforcement is by erector



REINFORCEMENT SCHEDULE

Sheet Metal Fabricators

| REINF. CLASS | EI* | ANGLE | | CHANNEL OR ZEE | |
|--------------|--------------------|--|----------------------|--|--------------|
| | | H x T (MIN) | WT LF | H x B x T (MIN) | WT LF |
| A | 0.43 | Use C | | Use B | |
| B | 1.0 | Use C | | 3/4 x 1/2 x 20 ga | 0.24 |
| C | 1.9 | C1 x 16 ga C3/4 x 1/8 | 0.40 0.57 | 3/4 x 1/2 x 18 ga 1 x 3/4 x 20 ga | 0.31 |
| D | 2.7 | H3/4 x 1/8 C1 x 1/8 | 0.57 0.80 | 1 x 3/4 x 18 ga | 0.45 |
| E | 6.5 | C1 1/4 x 12 ga H1 x 1/8 | 0.90 | 2 x 1 1/8 x 20 ga | 0.60 |
| F | 12.8 | H1 1/4 x 1/8 | 1.02 | 1 1/2 x 3/4 x 18 ga | 0.54 |
| G | 15.8 | 1 1/2 x 1/8 | 1.23 | 1 1/2 x 3/4 x 16 ga | 0.66 |
| H | 22 (+) 26.4 (-) | 1 1/2 x 3/16 2 x 1/8 | 1.78 1.65 | 1 1/2 x 3/4 x 1/8 | 1.31 |
| I | 69 | C2 x 3/16 2 1/2 x 1/8 | 2.44 2.10 | 2 x 1 1/8 x 12 ga 3 x 1 1/8 x 16 ga | 1.60 1.05 |
| J | 80 | H2 x 3/16 C2 x 1/4 2 1/2 x 1/8 (+) | 2.44 3.20 2.10 | 2 x 1 1/8 x 1/8 | 1.85 |
| K | 103 | 2 1/2 x 3/16 | 3.10 | 3 x 1 1/8 x 12 ga | 2.00 |
| L | 207 | H2 1/2 x 1/4 | 4.10 | 3 x 1 1/8 x 1/8 | 2.29 |



TYPE 1 HAS AN INTERNAL TIE ROD
F = W-D = FLAT WIDTH

NOTES:

- 1) Reinforcement is by erector, and is only required on the flat surface.
- 2) See Duct Construction Tables for limits of application.
- 3) Ref: SMACNA-HVAC Duct Construction Standards-Metal and Flexible, Second Edition 1995, page 1.32, table 1-10.
- 4) EI-Nominal stiffness index number is the number listed times 100,000.



OVAL SINGLE WALL FITTINGS

LEGEND

| | |
|--------------------|----------------------------|
| OAR - ANGLE RING | OR - REDUCER |
| OBM - BELLMOUTH | OS - COUPLING |
| OCMB - COMBINATION | OSET - OFFSET |
| OT2 - CROSS | ODSA - SPUN INSULATION END |
| OC - CONICAL | OT - TEE |
| OTST - SADDLE TAP | OL - LATERAL |
| OE - ELBOW | OEC - END CAP |
| OF - FLAT SADDLE | |

DIMENSIONING CODE

| | |
|-----|---|
| A | - Size of main inlet major axis, a-minor axis |
| B | - Size of main outlet, if reducing major axis, b-minor axis |
| C,D | - Size of take off taps major axis, c, d-minor axis |
| P | - Angle Between Cross Tap Centerlines |
| R | - Radius |
| S | - Length of Male End of Fittings |
| Z | - Offset Height |
| EB | - Easy bend for vertical elbows |
| HB | - Hard bend for horizontal elbows |

ORDERING

Specify type of fittings and list the following dimensions:

| | |
|-------------|--------------------------|
| ELBOWS | - A, a, B, b |
| TEES | - A, a, B, b, C, c, D, d |
| LATERALS | - A, a, B, b, C, c, D, d |
| CROSSES | - A, a, B, b, C, c, D, d |
| ACCESSORIES | - As Noted |

The drawings shown are illustrative of the types fabricated.

All fittings, unless noted, are fabricated as a male part on each end for slip-joint assembly with spiral pipe.

Van Stone angle ring, Solid welded flange, Accuflange or Ovalmate flanges are available on special order.