## Single Wall Round Spiral Duct and Fittings Construction Standards

Positive Pressure

## Gauge selection for G90 galvanized steel (ASTM A653), paint grip steel, type 304 stainless steel, and poly coated steel (PCS/PVC).*

Fittings are spot welded and/or gorelocked through 40" diameter. All larger fittings are continuously welded except for PCS/PVC fittings. All fittings can be provided as continuously welded if required.

|  | 2005 SMACNA 10" WG |  | 1995 SMACNA 2" WG |  | 1995 SMACNA 10" WG |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Duct | Spiral |  | Spiral |  | Spiral |  |
| Diameter | Pipe | Fittings | Pipe | Fittings | Pipe | Fittings |
| 3"-6" | 26 | 26 | 26 | 26 | 26 | 26 |
| $7{ }^{\text {7-8" }}$ | 26 | 26 | 26 | 26 | 26 | 26 |
| $9 "-10 "$ | 26 | 26 | 26 | 26 | 26 | 26 |
| $12^{\prime \prime}$ | 26 | 26 | 26 | 26 | 26 | 24 |
| $14{ }^{\prime \prime}$ | 26 | 26 | 26 | 26 | 26 | 24 |
| $16^{\prime \prime}$ | 26 | 26 | 24 | 24 | 24 | 22 |
| 18" | 26 | 26 | 24 | 24 | 24 | 22 |
| 20 "-24" | 26 | 24 | 24 | 24 | 24 | 22 |
| $26{ }^{\prime \prime}$ | 24 | 22 | 24 | 24 | 24 | 22 |
| 28"-36" | 24 | 22 | 24 | 22 | 22 | 20 |
| 38"-42" | 24 | 22 | 22 | 20 | 22 | 20 |
| 44"-48" | 22 | 20 | 22 | 20 | 20 | 20 |
| $50 "$ | 22 | 20 | 22 | 20 | 20 | 20 |
| 52"-60" | 22 | 20 | 20 | 18 | 18 | 18 |
| 62"-66" | 22 | 18 | 18 | 16 | 18 | 16 |
| 68"-84" | 20 | 18 | 18 | 16 | 18 | 16 |
|  | 2005 SMACNA 10" WG |  | 1995 SMACNA 2" WG |  | 1995 SMACNA 10" WG |  |
| Duct | Spiral |  | Spiral |  | Spiral |  |
| Diameter | Pipe | Fittings | Pipe | Fittings | Pipe | Fittings |
| 3"-8" | 26 | 26 | 26 | 24 | 26 | 20 |
| $9 "-14 "$ | 26 | 26 | 26 | 24 | 26 | 20 |
| 16 "-26" | 24 | 24 | 24 | 22 | 24 | 20 |
| 28"-36" | 24 | 22 | 22 | 20 | 22 | 20 |
| $38{ }^{\prime \prime}-50{ }^{\prime \prime}$ | 22 | 20 | 20 | 20 | 20 | 18 |
| $52 "-60 "$ | 20 | 18 | 18 | 18 | 18 | 18 |
| 62"-84" | 18 | 16 | 18 | 16 | 18 | 16 |

## Gauge selection for aluminum type 3003.

Fittings are spot welded and/or gorelocked through 40" diameter. All larger fittings are continuously welded. All fittings can be provided as continuously welded if required.

|  | 2005 SMACNA 10" WG: POSITIVE |  | 2005 SMACNA 2" WG: NEGATIVE |  |
| :---: | :---: | :---: | :---: | :---: |
| Duct | Spiral |  | Spiral |  |
| Diameter | Pipe | Fittings | Pipe | Fittings |
| 3 "-8" | 0.025" | 0.032" | 0.025" | 0.040" |
| 9"-14" | $0.025{ }^{\prime \prime}$ | $0.032{ }^{\prime \prime}$ | 0.032 " | 0.040" |
| 16 "-26" | 0.032" | 0.040" | $0.040^{\prime \prime}$ | 0.050" |
| 28"-36" | 0.040" | 0.050" | 0.050" | 0.063" |
| 38"-50" | 0.050" | 0.063" | 0.063" | 0.071" |
| 52 "-60" | 0.063 " | 0.071" | consult factory | 0.090" |
| 62 "-84" | consult | 0.090" | consult | consult |
|  | factory |  | factory | factory |

SINGI E WAL ROUND

## Single Wall Round Spiral Duct and Fittings Construction Standards <br> Negative Pressure

Gauge selection for galvanized steel (ASTM A653), paint grip steel, type 304 stainless steel, and poly coated steel (PCS/PVC).*
Fittings are spot welded and/or gorelocked through 40 " diameter. All larger fittings are continuously welded except for PCS/PVC fittings. All fittings can be provided as continuously welded if required.

| Max. | 2005 SMACNA 2" WG |  |  |  | 2005 SMACNA 4" WG |  |  |  | 2005 SMACNA 6" WG |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Duct | Spiral |  |  |  | Spiral |  |  | Rein. \& | Spiral |  |  |  |
| Diam. | Pipe | Spacing | Fittings | Spacing | Pipe | Spacing | Fittings | Spacing | Pipe | Spacing | Fittings | Spacing |
| $6{ }^{\prime \prime}$ | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  |
| 8" | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  |
| 10 | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  | 26 |  |
| 12 " | 26 |  | 26 |  | 26 |  | 24 |  | 24 |  | 24 |  |
| 14 " | 26 |  | 24 |  | 24 |  | 22 |  | 24 |  | 22 |  |
| 16 " | 26 |  | 24 |  | 24 |  | 22 |  | 26 | A12 | 22 | A12 |
| 18 " | 26 | A12 | 24 | A12 | 26 | A12 | 24 | A12 | 26 | A12 | 22 | A12 |
| $20 "$ | 26 | A12 | 24 | A12 | 26 | A12 | 24 | A12 | 26 | A12 | 22 | A12 |
| 22 " | 26 | A12 | 24 | A12 | 26 | A12 | 24 | A12 | 24 | A12 | 22 | A12 |
| $24 "$ | 26 | A12 | 24 | A12 | 26 | A12 | 24 | A12 | 24 | A12 | 22 | A12 |
| 30 " | 26 | A12 | 24 | A12 | 24 | A12 | 22 | A12 | 24 | A12 | 20 | A12 |
| $36 "$ | 26 | A12 | 24 | A12 | 24 | A12 | 22 | A12 | 22 | B12 | 20 | B12 |
| 42 " | 26 | A12 | 22 | A12 | 22 | B12 | 20 | B12 | 22 | B12 | 18 | B12 |
| 48" | 24 | A12 | 22 | A12 | 22 | B12 | 20 | B12 | 20 | B12 | 18 | B12 |
| $54^{\prime \prime}$ | 24 | B12 | 22 | B12 | 22 | B12 | 18 | B12 | 20 | C 12 | 18 | C 12 |
| $60 "$ | 24 | B12 | 22 | B12 | 22 | C12 | 18 | C12 | 20 | C 12 | 18 | C 12 |
| $66^{\prime \prime}$ | 24 | B12 | 20 | B12 | 20 | C12 | 18 | C12 | 18 | E12 | 16 | E12 |
| 72 | 22 | B12 | 20 | B12 | 20 | D12 | 18 | D12 | 18 | E12 | 16 | E12 |
| $78{ }^{\prime \prime}$ | 22 | C12 | 20 | C12 | 20 | E12 | 18 | E12 | 18 | E12 | 16 | E12 |
| $84{ }^{\prime \prime}$ | 22 | C12 | 20 | C12 | 20 | E12 | 18 | E12 | 18 | F12 | 16 | F12 |
| $90^{\prime \prime}$ | 22 | D12 | 18 | D12 | 18 | E12 | 16 | E12 | 18 | G12 | 16 | G12 |
| 96" | 22 | E12 | 18 | E12 | 18 | E12 | 16 | E12 | 18 | G12 | 16 | G12 |
| Max. | 2005 SMACNA 10" WG |  |  |  | 2005 SMACNA 2" WG |  |  |  | RIDCS CLASS $12{ }^{\text {" }}$ WG |  |  |  |
| Duct | Spiral | Rein. \& |  | Rein. \& | Spiral | Rein. \& |  | Rein. \& | Spiral | Rein. \& |  |  |
| Diam. | Pipe | Spacing | Fittings | Spacing | Pipe | Spacing | Fittings | Spacing | Pipe | Spacing | Fittings | Spacing |
| $6{ }^{\prime \prime}$ | 26 |  | 26 |  | 26 |  | 24 |  | 22 |  | 22 |  |
| 8" | 26 |  | 24 |  | 26 |  | 24 |  | 22 |  | 22 |  |
| 10 | 26 |  | 24 |  | 26 |  | 24 |  | 22 |  | 22 |  |
| 12 " | 24 |  | 22 |  | 26 |  | 24 |  | 22 |  | 22 |  |
| 14 " | 24 | A12 | 22 | A12 | 26 |  | 24 |  | 22 |  | 22 |  |
| $16 "$ | 24 | A12 | 22 | A12 | 24 |  | 22 |  | 22 |  | 22 |  |
| 18" | 24 | A12 | 22 | A12 | 24 |  | 22 |  | 20 |  | 20 | F1 20 |
| $20 "$ | 24 | A12 | 22 | A12 | 24 |  | 22 |  | 20 |  | 20 | F1 20 |
| 22 " | 24 | A12 | 20 | A12 | 24 |  | 22 |  | 18 |  | 20 | F1 20 |
| 24 " | 22 | A12 | 20 | A12 | 24 |  | 20 |  | 18 |  | 20 | F1 20 |
| $30 "$ | 22 | A12 | 18 | A12 | 22 |  | 20 |  | 16 |  | 18 | F1 20 |
| $36 "$ | 20 | B12 | 18 | B12 | 22 |  | 20 |  | 16 |  | 16 | F1 12 |
| 42 " | 20 | B12 | 18 | B12 | 20 |  | 18 |  | 20 | F1 12 | 16 | F1 12 |
| 48" | 18 | C12 | 16 | C12 | 20 |  | 18 |  | 20 | F1 12 | 14 | F1 12 |
| $54 "$ | 18 | D12 | 16 | D12 | 18 |  | 16 |  | 20 | F1 12 | 14 | F1 12 |
| $60 "$ | 18 | E12 | 16 | E12 | 18 |  | 16 |  | 18 | F1 12 | 12 | F1 12 |
| $66^{\prime \prime}$ | 18 | E12 | 16 | E10 | 16 |  | 14 |  | 18 | F1 12 | 12 | F1 12 |
| 72 | 18 | E12 | 16 | F10 | 16 |  | 14 |  | 18 | F1 12 | 12 | F1 12 |
| 78" | 16 | G12 | 16 | G6 | 16 |  | 14 |  | 18 | F1 12 | 10 | F1 12 |
| 84" | 16 | G12 | 16 | G6 | 16 |  | 14 |  | 18 | F1 12 | 10 | F1 12 |
| $90 "$ | 16 | G12 | 16 | G6 | N/A |  | N/A |  | 18 | F1 12 | 10 | F1 12 |
| $96{ }^{\prime \prime}$ | 16 | G12 | 16 | G6 | N/A |  | N/A |  | 18 | F1 12 | 10 | F1 12 |

A, B, C , D, E, F, G = Angle ring reinforcements per SMACNA 2005 HVAC DCS Table 3-2
F1 = F1 reinforcement per SMACNA RIDCS, Chapter 12

* Refer to note on the bottom of page 2.

$90^{\circ}$ 5-Piece Gored Elbow

$60^{\circ}$ 3-Piece Gored Elbow

$45^{\circ}$ Pressed Elbow

$45^{\circ}$ 3-Piece Gored Elbow

$221_{2}{ }^{\circ}$ and $30^{\circ}$ 2-Piece Gored Elbow


90` 3-Piece Elbow with Heel Tap


45 ${ }^{\circ}$ 3-Piece Elbow with Reducer

$X=D_{1}-D_{2}$
4" Minimum

90̊ㄹ-eiece Mitered Elbow

$90^{\circ} 5$-Piece Elbow with Reducer

$X=D_{1}-D_{2}$
4" Minimum

Field Installed Pressed Tap


Pressed Tee


| $\mathrm{D}_{3} / \mathrm{D}_{1}$ | R | L (PT) |
| :---: | :---: | :---: |
| 4"/4" | .394" | 14 |
| 4"/6" | . 394 " | $14{ }^{\prime \prime}$ |
| 4"/8" | . 394 " | 14 " |
| 4"/10" | . 394 " | 14 " |
| 4"/12" | . 394 " | $14{ }^{\prime \prime}$ |
| 6"/6" | .787" | $16 "$ |
| $6 " / 8 "$ | .787" | $16^{\prime \prime}$ |
| 6"/10" | .787" | $16 "$ |
| 6"/12" | .787" | $16^{\prime \prime}$ |
| 6"/14" | .787" | $16 "$ |
| 6"/16" | .787" | $16 "$ |
| 6"/18" | .787" | $16{ }^{\prime \prime}$ |
| 8"/8" | .787" | 18" |
| 8"/10" | .787" | 18 " |
| 8"/12" | . $787{ }^{\prime \prime}$ | $18{ }^{\prime \prime}$ |
| 8"/14" | .787" | $18{ }^{\prime \prime}$ |
| 8"/16" | .787" | $18{ }^{\prime \prime}$ |
| 8"/18" | .787" | 18 " |
| 8"/20" | .787" | $18{ }^{\prime \prime}$ |
| 8"/22" | .787" | $18{ }^{\prime \prime}$ |
| 8"/24" | 1.0 " | 20 |
| 10"/10" | 1.00 | 20 |
| 10"/12" | $1.0{ }^{\prime \prime}$ | $20^{\prime \prime}$ |
| 10"/14" | 1.00 | $20 "$ |
| 10"/16" | 1.00 | 201 |
| 10"/18" | $1.0{ }^{\prime \prime}$ | $20 "$ |
| 10"/20" | $1.0{ }^{\prime \prime}$ | 201 |
| 10"/22" | 1.00 | 20 |
| 10"/24" | $1.0{ }^{\prime \prime}$ | $20 "$ |
| 12"/12" | $1.0{ }^{\prime \prime}$ | 22 " |
| 12"/14" | $1.0{ }^{\prime \prime}$ | 22 |
| 12"/16" | 1.00 | 22 " |
| 12"/18" | 1.00 | 22 |
| 12"/20" | 1.00 | 22 |
| 12"/22" | 1.00 | 22 |
| 12"/24" | $1.0{ }^{\prime \prime}$ | 22 |



## Cross Tee


$D_{3} \geq D_{4}$


Reducing Cross Tee


## Conical Tee



## Conical Cross Tee



## Reducing Conical Tee



Reducing Conical Cross Tee


$\begin{array}{rr}3 \leq D_{3} \leq 8 & Y=4^{\prime \prime} \\ 9 \leq D_{3} \leq 14 & Y=7 \prime \\ 15 \leq D_{3} \leq 26 & Y=10 " \\ 27 \leq D_{3} & Y=13^{\prime \prime}\end{array}$

Combination Cross


Reducing Combination Tee


Reducing Combination Cross



## Lateral Cross $45^{\circ}$



Reducing Lateral $45^{\circ}$


Reducing $45^{\circ}$ Lateral Cross


## Conical Lateral $45^{\circ}$



Reducing Conical Lateral $45^{\circ}$



Reducing Conical $45^{\circ}$ Lateral Cross


$X=D_{1}-D_{2}$
4" Minimum

Eccentric Reducer

$X=D_{1}-D_{2}$
4" Minimum

Pressed Reducer


| $\mathrm{D}_{3} / \mathrm{D}_{1}$ | L |
| :---: | :---: |
| 4"/3" | $17 / 8^{\prime \prime}$ |
| 5"/3" | $2^{3 / 4} 4^{\prime \prime}$ |
| 5"/4" | $17 / 8^{\prime \prime}$ |
| $6 " / 4 "$ | $31 / 8{ }^{\prime \prime}$ |
| 6"/5" | 21/4" |
| 7"/5" | $3{ }^{5 / 8} 8^{\prime \prime}$ |
| 7"/6" | $23 / 4{ }^{\prime \prime}$ |
| 8"/5" | $41 /{ }^{1 /}$ |
| 8"/6" | $3{ }^{5} / 8^{\prime \prime}$ |
| 8"/7" | $2^{3 / 4} 4^{\prime \prime}$ |
| 9"/6" | $41 / 2^{\prime \prime}$ |
| $9 \mathrm{Cl} / 7$ | 3 5/8" |
| 9"/8" | $2^{3 / 4} 4^{\prime \prime}$ |
| 10"/6" | $53 / 8{ }^{\prime \prime}$ |
| 10"/7" | $41 / 2^{\prime \prime}$ |
| 10"/8" | $3{ }^{5 / 8}$ |
| 10"/9" | $2^{3 / 4} 4^{\prime \prime}$ |
| 12"/8" | $53 / 8{ }^{\prime \prime}$ |
| 12"/9" | $41 / 2^{\prime \prime}$ |
| 12"/10" | $3{ }^{5} / 8^{\prime \prime}$ |

Dampers come standard with:
. 3/8" locking handle

- Nylon bushings
- Insulation stand off


Pipe Couplings


Pressed End Cap



Fitting Couplings


End Cap
$30^{\circ}$ Offset


Wye Branch


Bullhead Tee


## Rectangle to Round



Reducing Wye Branch


Reducing Bullhead Tee
With or without vanes


Rectangular Access Section
Also available as shop-installed SRTA or field-installed accessory FRTA.



| $D_{1}$ | Access Size |
| :---: | :---: |
| $8^{\prime \prime}$ to 12" | $8^{\prime \prime} \times 8$ " |
| $13^{\prime \prime}$ to 17" | $12 " \times 12^{\prime \prime}$ |
| 18" and over | $18^{\prime \prime} \times 18^{\prime \prime}$ |

Negative and positive pressure.

Pressed Bellmouth

Galvanized only


| $D_{1}$ | $R$ |
| :---: | :---: |
| $4^{\prime \prime}$ | $.394^{\prime \prime}$ |

5" .472"
6" .787"
$7^{\prime \prime} \quad 1.0^{\prime \prime}$
8" $1.0^{\prime \prime}$
9" $1.0^{\prime \prime}$
$10^{\prime \prime} \quad 1.0^{\prime \prime}$
$12^{\prime \prime} \quad 1.0^{\prime \prime}$

Spun Bellmouth


| $\mathrm{D}_{1}$ | $\mathrm{D}_{2}$ | L | R |
| :---: | :---: | :---: | :---: |
| $13^{\prime \prime}$ | 19 " | 4" | $3{ }^{\prime \prime}$ |
| $14^{\prime \prime}$ | 21 " | $4{ }^{\prime \prime}$ | $3 "$ |
| 15 " | $24^{\prime \prime}$ | $5^{\prime \prime}$ | 4 " |
| $16 "$ | $26^{\prime \prime}$ | 5" | 4" |
| $17^{\prime \prime}$ | $25^{\prime \prime}$ | 5" | 4" |
| 18 " | $26^{\prime \prime}$ | 5" | 4" |
| $20^{\prime \prime}$ | 281 | 5" | 4" |
| 21" | $29 "$ | 5" | 4" |
| $22^{\prime \prime}$ | 32 " | $6 "$ | 5" |
| 23 " | $33^{\prime \prime}$ | $6 "$ | 5" |
| $24^{\prime \prime}$ | $34^{\prime \prime}$ | $6{ }^{\prime \prime}$ | 5" |
| $26^{\prime \prime}$ | $38 "$ | $7{ }^{\prime \prime}$ | $6 "$ |
| 281 | 401 | $7{ }^{\prime \prime}$ | $6 "$ |
| $30^{\prime \prime}$ | 42 " | $7{ }^{\prime \prime}$ | $6 "$ |
| 32 " | $46^{\prime \prime}$ | $8{ }^{\prime \prime}$ | $7{ }^{\prime \prime}$ |
| $34^{\prime \prime}$ | $48{ }^{\prime \prime}$ | $8{ }^{\prime \prime}$ | $7{ }^{\prime \prime}$ |
| $36^{\prime \prime}$ | $50 "$ | $8{ }^{\prime \prime}$ | $7{ }^{\prime \prime}$ |
| $38 "$ | $52 "$ | 8" | $7{ }^{\prime \prime}$ |
| 401 | 56 | $9{ }^{\prime \prime}$ | 8" |
| 42 " | $58 "$ | 9" | 8" |
| $44^{\prime \prime}$ | $60 "$ | $9{ }^{\prime \prime}$ | $8{ }^{\prime \prime}$ |
| $46^{\prime \prime}$ | 62 " | $9{ }^{\prime \prime}$ | 8" |
| $48^{\prime \prime}$ | $64^{\prime \prime}$ | $9{ }^{\prime \prime}$ | $8{ }^{\prime \prime}$ |


| D | $\mathrm{D}_{2}$ | L |
| :---: | :---: | :---: |
| $12^{\prime \prime}$ | $14^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| $14^{\prime \prime}$ | 16 " | $31 / 2^{\prime \prime}$ |
| $16 "$ | $18{ }^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| $18{ }^{\prime \prime}$ | $20 "$ | $31 / 2^{\prime \prime}$ |
| 201 | 22 " | $31 / 2$ " |
| 22 | $24^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| 24 " | $26^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| $26 "$ | $28 "$ | $31 / 2^{\prime \prime}$ |
| 28 " | $30 "$ | $31 / 2^{\prime \prime}$ |
| 30" | $32 "$ | $31 / 2{ }^{\prime \prime}$ |
| 32 " | $34 "$ | $31 / 2$ " |
| $34 "$ | $36 "$ | $31 / 2^{\prime \prime}$ |
| $36 "$ | $38^{\prime \prime}$ | $31 / 2{ }^{\prime \prime}$ |
| 38 " | $40 "$ | $31 / 2^{\prime \prime}$ |
| 40 | 42 " | $31 / 2^{\prime \prime}$ |
| 42" | $44^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| 44 | $46 "$ | $31 / 2^{\prime \prime}$ |
| 46 | $48{ }^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| $48^{\prime \prime}$ | 401 | $31 / 2$ " |
| 50 | $52 "$ | $31 / 2^{\prime \prime}$ |
| 52 | $54 "$ | $31 / 2$ " |
| 54 " | $56 "$ | $31 / 2$ " |
| 56 | $58{ }^{\prime \prime}$ | $31 / 2^{\prime \prime}$ |
| 58 " | $60 "$ | $31 / 2^{\prime \prime}$ |
| $60 "$ | 62 " | $31 / 2^{\prime \prime}$ |

## Shop/Field Installed Tap



## Shop/Field Installed Lateral Tap

Standard flange is $1 / 22^{\prime \prime}$.
2 " flange is also available.


Shop/Field Rectangle on Round


## Shop/Field Installed Conical Tap



Shop/Field Installed Combination Tap


Field Installed Standard Door


## SINGLE WALL SLIP JOINT

Metal fittings are sized to slip into, and should be used with, spiral duct. A tight fit is necessary to minimize friction loss and to promote proper sealing. Care should be taken during handling and installation to avoid dents and distortions that can cause improper fit or difficult installation.

1. Bring the bottom of the fitting collar into the spiral duct at a slight angle.
2. Carefully work the rest of the collar into the spiral duct until approximately one inch of the colllar remains exposed between the end of the spiral duct and the stop bead of the fitting collar. Do not use a screwdriver or knife to help make the connection. Apply pressure with the heal of your hand or with your fist to help slip the fitting into the duct.
3. Apply duct sealer to this exposed area.
4. Push the fitting into the spiral duct until the stop bead meets the edge of the spiral duct.
5. 5. Fasten the fitting into the spiral duct with screws per the chart at right. The screws should be evenly spaced around the perimeter of the connection, approximately $1 / 2^{\prime \prime}$ back from the stop bead. Placement of the screws should be opposite of each other as demonstrated in the diagram.

## FLANGE

Flanges come factory-mounted on fittings and spiral duct. Flanges are standard for all duct 61 " in diameter, but are available in smaller sizes.

1. Place closed cell neoprene gasket on the face of one of the mating flanges.
2. Push the flanges together keeping the edges of the flanges aligned
3. Clamp the flanges to help hold them in place.
4. Screw the flanges together with self-tapping screws per the chart at right. The screws should be evenly spaced around the perimeter of the connection. Placement of the screws should be opposite of each other as demonstrated in the diagram.

Installation of Slip Joint Connector


| Duct Perimeter Round Equiv. | \# of Screws |  |
| :---: | :---: | :---: |
|  | Slip Fit | Flange |
| 4"-9" | 3 | NA |
| 10 | 3 | 4 |
| 12 "-16" | 3 | 6 |
| 18"-20" | 4 | 8 |
| 22 "-26" | 5 | 10 |
| 28"-30" | 6 | 12 |
| 32"-36" | 7 | 14 |
| 38"-42" | 8 | 16 |
| 44 "-46" | 9 | 18 |
| 48"-52" | 10 | 20 |
| 54"-56" | 11 | 22 |
| 58"-60" | 12 | 24 |
| 62"-66" | NA | 26 |
| 68"-72" | NA | 28 |
| 74 "-76" | NA | 30 |
| 78"-84" | NA | 32 |



Reducing Tee Cross


Reducing $45^{\circ}$ Lateral Cross


Damper


Wye Branch


Shop/Field Installed
Tap

$90^{\circ}$ Mitered Elbow


Reducing Conical Tee


Reducing Lateral $45^{\circ}$


Pipe Coupling


Reducing Wye Branch

$60^{\circ}$ 3-Piece Elbow


Reducing Combination Tee


Concentric Reducer


Pressed End Cap


End Cap


Reducing Bullhead
Tee


Rectangular Access Section

Shop/Field Installed Combination Tap



$30^{\circ}$ Offset


Pressed Bellmouth


Spun Bellmouth


Shop/Field Installed
Rectangle on Round


Field Installed Standard Door

