

Sure-SealTM Spiral Pipe & Fittings



9865 WAYNE AVENUE CINCINNATI, OHIO 45215 PHONE (513) 733-5955 FAX (513) 733-8050

LANGDON Inc.

Sure-Seal™ Spiral Self-Sealing Spiral Ductwork System



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- No messy sealer is required, simply slide the pieces together and secure with gasketed tek screw fasteners #10-16-3/4.
- Self sealing spiral will give you a finished look for exposed areas.
- Available in single wall and double wall
- The advantage of Sure Seal Spiral is a manufactured system with low leakage rates.
- Considerable Energy Savings.

Langdon's Sure•Seal™ Spiral is a single wall self-sealing spiral ductwork system that reduces installation cost. Our new gasketed connection is quick and easy. No messy sealer is required, simply slide the pieces together and secure with gasketed tek screw fasteners #10-16-3/4. Self sealing spiral will give you a finished look for exposed areas. Our patented gasket is a dual lipped profile of EPDM rubber that has been tested (using Langdon's manufactured spiral pipe) from Negative 2" W.G. to Positive 10" W.G. achieving a Class 3 seal rating in accordance with SMACNA HVAC Air Duct Leakage Test Manual (first edition 1985). The EPDM gaskets thermal properties are suitable for use in applications from 200°F to -20°F. Sure•Seal™ Spiral is available in single wall and double wall in even sizes from 4" to 30" diameter, 26 gauge to 22 gauge in galvanized, galvanneal, stainless steel, aluminum and PCD (polyvinyl coated ductwork). Tapes and mastic are conventional choices for sealing ductwork and the most cost effective time to seal ductwork is at installation of system. The cost of restoring systems not receiving the required sealing or not being properly sealed can greatly exceed the cost of a

proper application.

The transverse ductwork joint may have up to a 3/16" gap around circumference of the duct that will have to be sealed in field and SMACNA does not recommended that a duct system constructed to 3" wg class or lower be leak tested. Concerns for energy conservation, humidity control, space temperature control, room air movement, necessitate regulating leakage by prescriptive measures in SMANCA Construction Standards. Leakage is largely a function of static pressure and the amount of leakage in a system is significantly related to system size. Adequate airtightness can normally be ensured by a. selecting a static pressure, construction class suitable for the operating condition and b. sealing ductwork properly, if the ductwork system is not properly sealed this will result in air leakage above ceiling, energy loss and higher utility costs. The advantage of Sure•Seal™ Spiral is a manufactured system with low leakage rates, this eliminates field workmanship, sealant application, leak testing. As a price comparison, the elimination of sealing ductwork in the field would offset any additional manufacturing cost.

<u>Diameter</u>

Even Sizes 4" to 30"

Static Pressure

2" W.G. Negative to 10" W.G. Positive

EPDM Gasket

Thermal Properties

200° F to -20° F

Gauge

26 - 24 - 22

Materials

Galvanized

Galvanneal

Stainless Steel

Aluminum

PCD (polyvinyl coated duct)

Sure Class Products

Sure•Clamp™ Spiral
Sure•Clamp™ Double Wall
Sure•Clamp™ Access (Round)
Sure•Clamp™ Access (Rect.)

Sure-Seal™ Spiral Energy Savings

Sure • Seal™ 12" diameter test results

(AirTab International Certified Tab Report 3-18-10, Page 6)

Test results for 10" wg positive pressure had .52 cfm leakage for 100 square feet of 12" dia ductwork

Sure • Seal™ Leakage For 10" Positive Pressure

| CFM | | \$ CFM | | \$ for 100 sqft | \$ for 1,000 sqft | \$ for 10,000 sqft | Leakage |
|------|---|--------|---|-----------------|-------------------|--------------------|-------------|
| 0.52 | Χ | \$5.00 | = | \$2.60 | \$26.00 | \$260.00 | \$ per year |

Average cost to heat and cool 1 cfm for 1 year is \$ 5.00

SMACNA Construction Standards

SMACNA maximum allowable leakage is 13.50 cfm for 100 square feet of 12" diameter ductwork

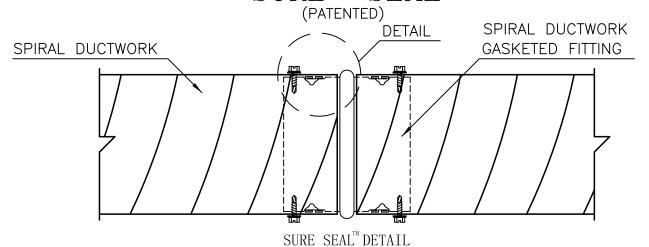
SMACNA Standards Allowable Leakage

| CFM | \$ CFM | | \$ for 100 sqft | \$ for 1,000 sqft | \$ for 10,000 sqft | Leakage |
|---------|--------|---|-----------------|-------------------|--------------------|-------------|
| 13.50 X | \$5.00 | = | \$67.50 | \$675.00 | \$6,750.00 | \$ per year |

Average cost to heat and cool 1 cfm for 1 year is \$ 5.00

Tapes and mastic are conventional choices for sealing ductwork and the most cost effective time to seal ductwork is at installation of system. The cost of restoring systems not receiving the required sealing or not being properly sealed can greatly exceed the cost of a proper application. The transverse ductwork joint may have up to a 3/16" gap around circumference of the duct that will have to be sealed in field and SMACNA does not recommended that a duct system constructed to 3" wg class or lower be leak tested. Concerns for energy conservation, humidity control, space temperature control, room air movement, necessitate regulating leakage by prescriptive measures in SMANCA Construction Standards. Leakage is largely a function of static pressure and the amount of leakage in a system is significantly related to system size. Adequate airtightness can normally be ensured by a. selecting a static pressure, construction class suitable for the operating condition and b. sealing ductwork properly. If the ductwork system is not properly sealed this will result in air leakage above ceiling, energy loss and higher utility costs. The advantage of Sure•SealTM Spiral is a manufactured system with low leakage rates, this eliminates field workmanship, sealant application and leak testing. As a price comparison, the elimination of sealing ductwork in the field would offset any additional manufacturing cost.

SUBMITTAL SURE • SEAL

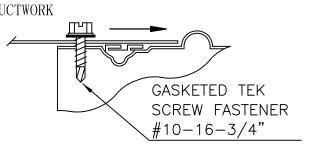


SINGLE WALL SPIRAL DUCTWORK

SURE SEAL™ GASKET

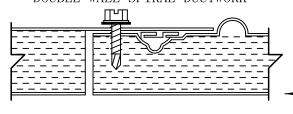
SPIRAL DUCTWORK

GASKETED FITTING



SURE SEAL[™] DETAIL
DOUBLE WALL SPIRAL DUCTWORK

INTERNAL INSULATION
1" THICK/1LB. DENSITY

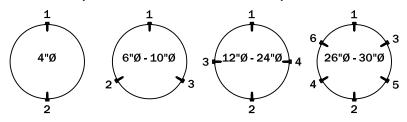


INNER LINER
PERFORATED/
SOLID INNER

PROFILE EPDM RUBBER GASKET



DIAGRAM BELOW SHOWS TEK SCREW QUANTITY AND PLACEMENT SEQUENCE



| ROUND DUCTWORK 4"-30" ROUND DUCTWORK GAUGE UNREINFORCED POSITIVE PRESSURE TO 10" W.G. | | | | | |
|---|----------|----------|----------|--|--|
| DIAMETER | FITTING | DIAMETER | SPIRAL | | |
| 4"-20" | 24 GAUGE | 4"-24" | 26 GAUGE | | |
| 21"-30" | 22 GAUGE | 25"-30" | 24 GAUGE | | |

MATERIAL, GALVANIZED, GALVANNEALED, STAINLESS STEEL, PVC COATED.

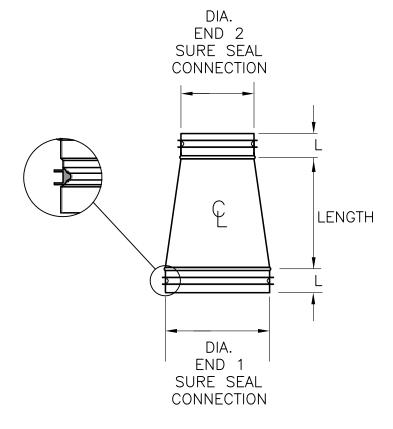
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#52 ELBOWS

| *SPECIFY CUSTOM_DEGR | EE | | | | |
|--|---------|------|-------|------------------------|----------------------------------|
| & CENTERLINE RAI | DIUS | 90 D | EGREE | | DIA. |
| | | | | | END 1 SURE SEAL CONNECTION |
| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | | | | | + CENTERLINE RADIUS |
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | E | DIA. ND 1 E SEAL | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | NECTION | |
| 3"-11" DIA. L=2 1/2 <u>+</u> 12"-20" DIA. L=2 7/8"+ 22"-36" DIA. L=3 1/4"+ | TAG | 0 | TY. | DEGREE | DIA END 1 |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | <u></u> | | | | |
| RL-2 | | | | | |
| GORE LOCK 14" DIA. AND LARGER | | | | | |
| | | | | | |
| <u>CENTERLINE RADIUS</u> 1-1/2 X DIAMETER | | | | | |
| GORE AMOUNT 0-22 DEGREE = 2 GORE | | | | | |
| 23-45 DEGREE = 3 GORE 46-60 DEGREE = 4 GORE 61-90 DEGREE = 5 GORE | | | | | |

#57 CONCENTRIC REDUCER

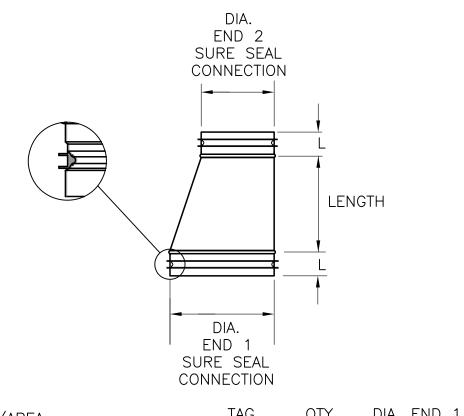


| SYSTEM NUMBER/AREA : | <u>TAG</u> | QTY. | DIA. END 1 | DIA END 2 |
|---|------------|------|------------|-----------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT | | | | |
| SMALL END SLIP CONNECTION | | | | |
| $3"-11"$ DIA. L=2 $1/2$ \pm 12"-20" DIA. L=2 $7/8$ " \pm 22"-36" DIA. L=3 $1/4$ " \pm | | | | |
| LONGITUDINAL SEAMS | | | | |
| LAP, SPOTWELD AND SEAL | | | | |
| RL-2 | | | | |
| LENGTH (4" MINIMUM) | | | | |

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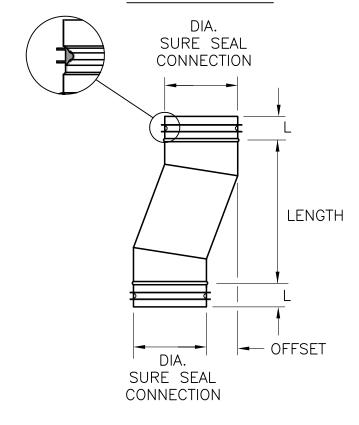
END 1 - END 2

#69 ECENTRIC REDUCER



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | <u>QTY.</u> | DIA. END 1 | DIA END 2 |
|---|------------|-------------|------------|-----------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT | | | | |
| SMALL END SLIP CONNECTION | | | | |
| 3"-11" DIA. L=2 1/2 <u>+</u> 12"-20" DIA. L=2 7/8"+ | | | | |
| 22"-36" DIA. L=3 $1/4$ " \pm | | | | |
| LONGITUDINAL SEAMS | | | | |
| LAP, SPOTWELD AND SEAL | | | | |
| RL-2 | | | | |
| <u>LENGTH (4" MINIMUM)</u> (FND 1 - FND 2) x 2 | | | | |

#53 OFFSET

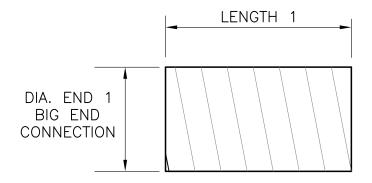


| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. | <u>OFFSET</u> |
|--|------------|------|------|---------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | |
| 3"-11" DIA. L=2 1/2 <u>+</u> 12"-20" DIA. L=2 7/8" <u>+</u> 22"-36" DIA. L=3 1/4" <u>+</u> | | | | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | | | | |
| RL-2 | | | | |
| LENGTH (6" MINIMUM) | | | | |

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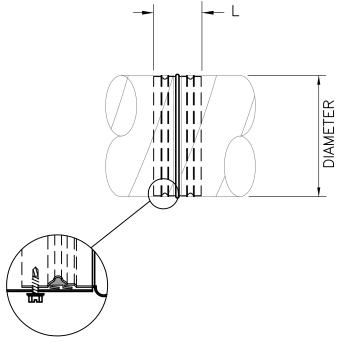
OFFSET X 2

#100S SPIRAL DUCTWORK



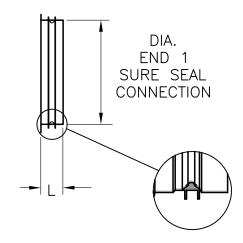
| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>IAG</u> | <u>QIY.</u> | DIA. END 1 | LENGIH 1 |
|---|------------|-------------|------------|----------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT BIG END RAW CONNECTION | | | | |
| LONGITUDINAL SEAM SPIRAL SEAM | | | | |
| RL-1 | | | | |
| | | | | |
| <u>LENGTH 1</u> = 10' MAX. 14" MIN. SPECIAL LENGTHS AVALIABLE UPON REQUEST | | | | |
| | | | | |

SPIRAL COUPLING



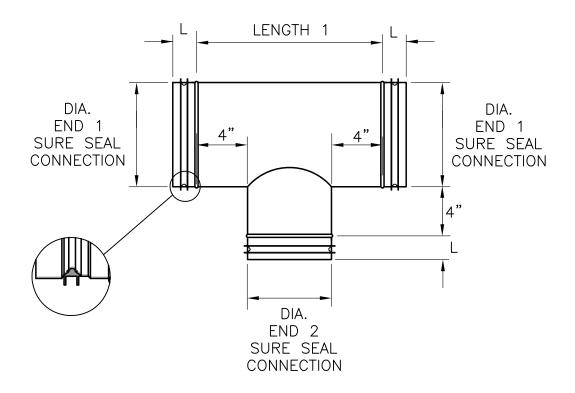
| SYSTEM NUMBER/AREA : MATERIAL TYPE : | QTY. | DIAMETER |
|--|------|----------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | |
| TRANSVERSE JOINT | | |
| SMALL END SLIP CONNECTION | | |
| $3"-11"$ DIA. L=5 $1/2\frac{\pi}{2}$ 12"-20" DIA. L=6 $1/4\frac{\pi}{2}$ 22"-36" DIA. L=7" \pm | | |
| LONGITUDINAL SEAMS LAP, SPOTWELD AND SEAL | | |
| | | |
| RL-2 | | |

#02 END CAP



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | <u>QTY.</u> | DIA. END 1 |
|---|------------|-------------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT | | | |
| SMALL END SLIP CONNECTION | | | |
| $3"-11"$ DIA. L=2 $1/2$ \pm 12"-20" DIA. L=2 $7/8$ " \pm 22"-36" DIA. L=3 $1/4$ " \pm | | | |
| 22 -30 DIA. L-3 1/4 ± | | | |
| LONGITUDINAL SEAMS | | | |
| LAP, SPOTWELD AND SEAL | | | |
| RI -2 | | | |
| | | | |
| | | | |

#55 STRAIGHT 90 DEGREE TEE



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 | DIA. END 2 |
|---|------------|------|------------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT | | | | |
| SMALL END SLIP CONNECTION 3"-11" DIA. L=2 1/2± 12"-20" DIA. L=2 7/8"± 22"-36" DIA. L=3 1/4"± | | | | |
| , | | | | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | | | | |
| RL-2 | | | | |

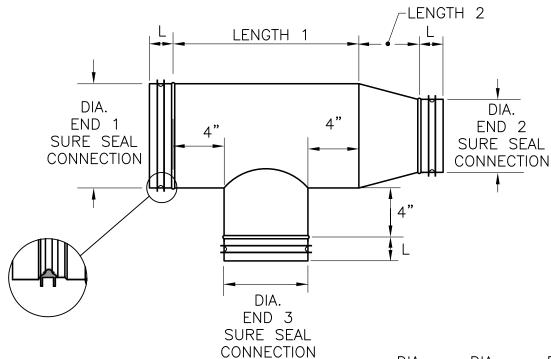
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END 2 + 8"

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LENGTH 1

#65 CONCENTRIC REDUCING TEE 90 DEGREE

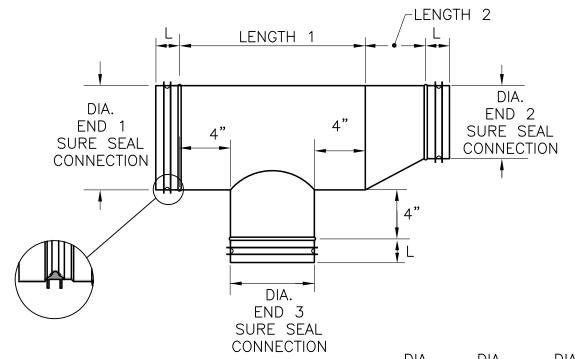


| | CONN | IECTION | | DIA. | DIA. | DIA. |
|--|------|------------|------|--------------|-------|-------|
| SYSTEM NUMBER/AREA : | | <u>TAG</u> | QTY. | <u>END 1</u> | END 2 | END 3 |
| MATERIAL/STATIC WG : | | | | | | |
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDA | | | | | | |
| TRANSVERSE JOINT | | | | | | |
| SMALL END SLIP CONNECTION | | | | | | |
| $3"-11"$ DIA. L=2 $1/2\frac{+}{2}$ 12"-20" DIA. L=2 $7/8"\pm$ 22"-36" DIA. L=3 $1/4"\pm$ | | | | | | |
| LONGITUDINAL SEAMS | | | | | | |
| LAP, SPOTWELD AND SEAL | | | | | | |
| | | | | | | |

LENGTH 2 (4" MINIMUM) END 1 — END 2

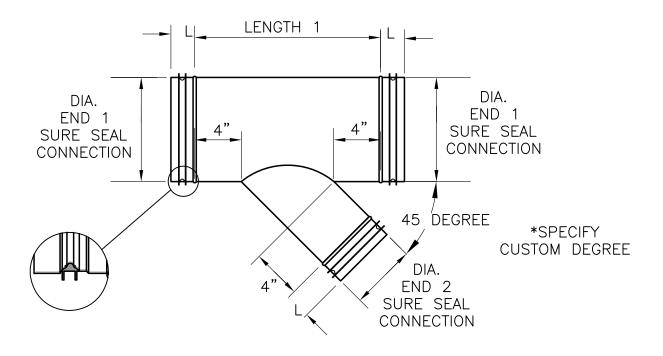
 $\frac{\text{LENGTH 1}}{\text{END 3 + 8"}}$

#65F ECCENTRIC REDUCING TEE 90 DEGREE



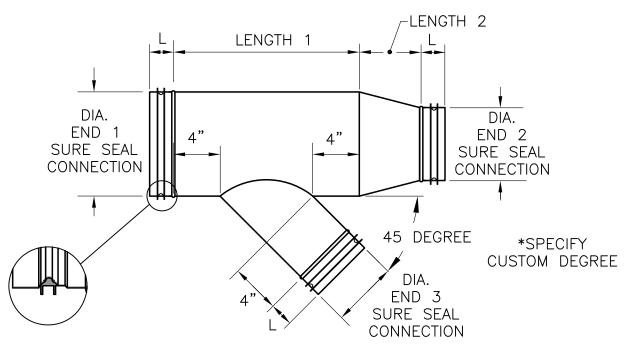
| SYSTEM NUMBER/AREA : | <u>TAG</u> | QTY. | END 1 | END 2 | END 3 |
|---|------------|------|-------|-------|-------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | | |
| 3"-11" DIA. L=2 $1/2$ ± $12"-20"$ DIA. L=2 $7/8"$ ± $22"-36"$ DIA. L=3 $1/4"$ ± | | | | | |
| LONGITUDINAL SEAMS LAP, SPOTWELD AND SEAL | | | | | |
| RL-2 | | | | | |
| " <u>LENGTH 1</u> END 3 + 8" | | | | | |
| LENGTH 2 (4" MINIMUM) (FND 1 - FND 2) X 2 | | | | | |

#54 LATERAL



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 | DIA. END 2 |
|---|------------|------|---------------|---------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT | | | | |
| SMALL END SLIP CONNECTION | | | | |
| $3"-11"$ DIA. L=2 $1/2$ $\frac{+}{2}$ 12"-20" DIA. L=2 $7/8$ " $\frac{+}{2}$ 22"-36" DIA. L=3 $1/4$ " + | | | | |
| LONGITUDINAL SEAMS LAP, SPOTWELD AND SEAL | | | | |
| RL-2 | | | | |
| LENGTH 1 | | | | |
| 45 DEGREE: DIA. END 2 X (1.41) + 8 30 DEGREE: DIA. END 2 X (2) + 8 | | | | |

#63 REDUCING LATERAL

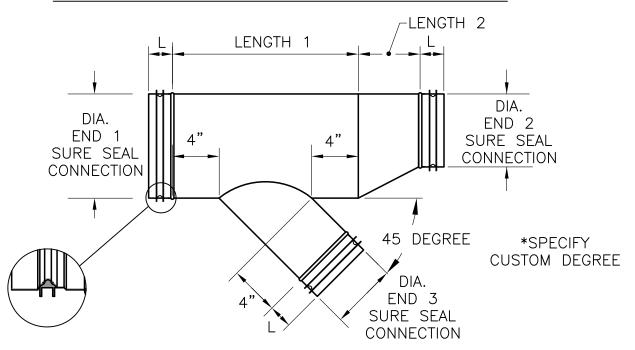


| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 | DIA. END 2 | DIA. END 3 |
|---|------------|------|---------------|---------------|---------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | | |
| $3"-11"$ DIA. L=2 $1/2$ \pm 12"-20" DIA. L=2 $7/8$ " \pm 22"-36" DIA. L=3 $1/4$ \pm | | | | | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | | | | | |
| RL-2 | | | | | |
| LENGTH 1 | | | | | |
| 45 DEGREE: DIA. END 3 X (1.41) + 8 30 DEGREE: DIA. END 3 X (2) + 8 | | | | | |

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LENGTH 2 (4" MINIMUM) END 1 - END 2

#63F ECCENTRIC REDUCING LATERAL



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 | DIA. END 2 | <u>DIA.</u> END 3 |
|---|-------------|------|---------------|---------------|----------------------|
| FABRICATE IN ACCORDANCE WITH | | | | | |
| SMACNA DUCT CONSTRUCTION STANDARDS | | | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | | |
| 3"-11" DIA. L=2 $1/2$ " 12"-20" DIA. L=2 $7/8$ " 22"-36" DIA. L=3 $1/4$. | | | | | |
| LONGITUDINAL SEAMS | | | | | |
| LAP, SPOTWELD AND SEAL | | | | | |
| RL-2 | | | | | |
| LENGTH 1 | | | | | |
| 45 DEGREE: DIA. END 3 X (1.41) + 8 30 DEGREE: DIA. END 3 X (2) + 8 | | | | | |
| LENGTH 2 (4" MINIMUM) (END 1 - END 2) X 2 | nsheetmetal | | | | |

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#73 LATERAL CROSS

| SYSTEM NUMBER/AR | | | | DIA. | *SPECIFY |
|---|---|----------|-----------|---------------------------------|---|
| FABRICATE IN AC SMACNA DUCT CONST | | NDARDS | | SURE SEAL CONNECTION | CUSTOM DEGREE |
| <u>TRANSVERSE</u> SMALL END SLIP | CONNECTION | END 3 | EAL 🗶 | 1 | 5 DEGREE DIA. END 2 SURE SEAL CONNECTION |
| | L=2 1/2 <u>+</u> L=2 7/8"+ L=3 1/4" + | | | 4" | |
| <u>LONGITUDIN</u> LAP, SPOTWEL | | | 4" | LENGTH | 4" |
| RL-2 | | | | 4" | <u></u> |
| LENG 45 DEGREE: DIA. EI 30 DEGREE: DIA. E | ND 3 X (1.4 | | | DIA. END 1 SURE SEAL CONNECTION | ' |
| TAG | QTY. DI | A. END 1 | DIA END 2 | DIA END 3 | |
| | | | | | |
| | | | | | |
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#64 REDUCING LATERAL CROSS

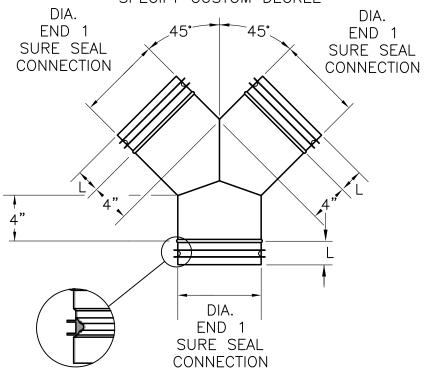
| | • | | : | | | | DIA. END | | | |
|------------|--|---|---------------------------------|---|-------------|--------------|---------------------------------|-----------|----------|------------------------------------|
| | | | DANCE WITH TION STANDA | RDS | | (| SURE S CONNEC | SEAL | | CIFY DEGREE |
| 12 22' | TRANSVE L END S 3"-11" D 2"-20" D "-36" DI | LIP CON IA. L=2 IA. L=2 A. L=3 | 1/2 <u>+</u> 7/8"+ 1/4" + | DIA. END 3 SURE SEA CONNECTION | × | \ | 4" | 45 | 5 DEGREE | DIA. END 4 SURE SEAL CONNECTION |
| | <u>LONGITUD</u> P, SPOTW | | | | | | _ | | | <u> </u> |
| RL- | -2/ | GTH 1 | | | 4" | | TENGTH | | 4" | <u>(</u> L |
| 45 DEGR | REE: DIA. | END 3 | X (1.41) + X (2) + 8 | 8 | | | • | | <u> </u> | |
| <u>LE1</u> | NGTH 2 (END 1 | (<u>4" MINI</u> — END | • | | | | DIA. END SURE S CONNEC | 1 SEAL | | |
| | <u>TAG</u> | QTY. | DIA. END 1 | <u>DIA EN</u> | <u>1D 2</u> | <u>DIA E</u> | END 3 | DIA | A END 4 | |
| | | | | | | | | | | |
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#132A 45° Y BRANCH

*SPECIFY CUSTOM DEGREE

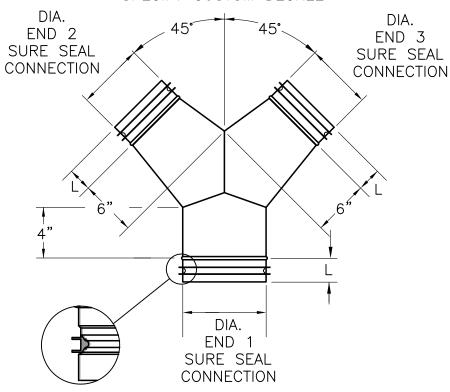


| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 |
|---|------------|------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | |
| $3"-11"$ DIA. L=2 $1/2$ \pm 12"-20" DIA. L=2 $7/8"\pm$ 22"-36" DIA. L=3 $1/4"\pm$ | | | |
| LONGITUDINAL SEAMS LAP, SPOTWELD AND SEAL | | | |
| RL-2 | | | |

(PATENTED)

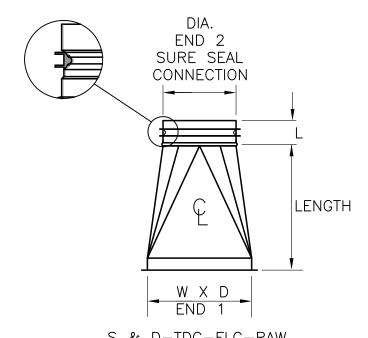
#132 45° Y BRANCH REDUCING

*SPECIFY CUSTOM DEGREE



| SYSTEM NUMBER/AREA : | <u>TAG</u> | QTY. | <u>DIA.</u> END 1 | <u>DIA.</u> END 2 | DIA. END 3 |
|---|------------|------|----------------------|----------------------|---------------|
| MATERIAL/STATIC WG : | | | | | |
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | | |
| TRANSVERSE JOINT | | | | | |
| SMALL END SLIP CONNECTION | | | | | |
| $3"-11"$ DIA. L=2 $1/2\frac{+}{2}$ 12"-20" DIA. L=2 $7/8"+$ | | | | | |
| 22"-36" DIA. L=3 $1/4$ " \pm | | | | | |
| LONGITUDINAL SEAMS | | | | | |
| LAP, SPOTWELD AND SEAL | | | | | |
| RL-2 | | | | | |

#50 CENTER LINE SQUARE TO ROUND

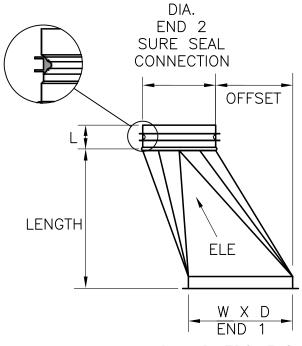


| S | & D-IDC- | FLG-RAW | W X D | CONN. | DIA. |
|--|------------|---------|---------------------|---------------|---------------------|
| SYSTEM NUMBER/AREA : | <u>TAG</u> | QTY. | END 1 CENTERLINE | TYPE END 1 | END 2 CENTERLINE |
| MATERIAL/STATIC WG : | | | X | | |
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDA | | | X | | |
| END 1 TRANSVERSE JOINT | | | X | | |
| S & D-TDC-FLG-RAW | | | X | | |
| END 2 TRANSVERSE JOINT | | | X | | |
| SMALL END SLIP CONNECTION 3"-11" DIA. L=2 1/2± | | | X | | |
| 12"-20" DIA. L=2 $7/8$ "± 22"-36" DIA. L=3 $1/4$ " ± | | | X | | |
| LONGITUDINAL SEAMS | | | X | | |
| LAP, SPOTWELD AND SEAL | | | X | | |
| | | | X | | |
| RL-2 | | | X | | |
| LENGTH (6" MINIMUM) | | | X | | |
| END 1 (W OR D LARGEST ONE) |) | | | | |

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- END 2

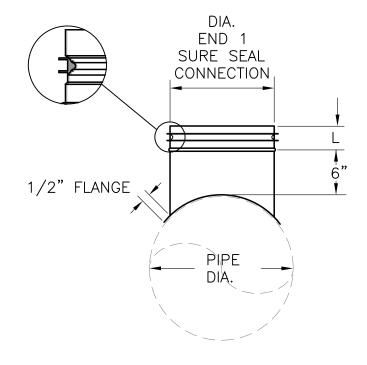
#74 OFFSET SQUARE TO ROUND



S & D-TDC-FLG-RAW

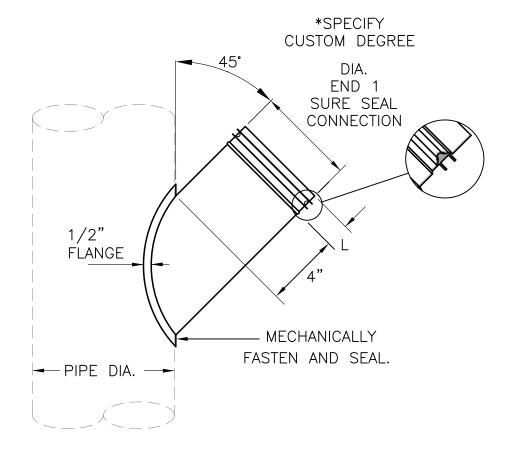
| SYSTEM NUMBER/AREA : | | <i>D</i> 100 | 1 20 100 | • | | | |
|--|------------|--------------|--------------|---------------|-----|---------------|------|
| MATERIAL/STATIC WG : | | | <u>W X D</u> | CONN. TYPE | DIA | | ELE. |
| FABRICATE IN ACCORDANCE WITH | <u>TAG</u> | QTY. | END 1 | <u>END 1</u> | | <u>OFFSET</u> | |
| SMACNA DUCT CONSTRUCTION STANDARD |)S | | X | | | | |
| END 1 TRANSVERSE JOINT | | | X | | | | |
| S & D-TDC-FLG-RAW | | | X | | | | |
| END 2 TRANSVERSE JOINT | | | X | | | | |
| SMALL END SLIP CONNECTION | | | | | | | |
| $3"-11"$ DIA. L=2 $1/2\frac{4}{1}$ | | | X | | | | |
| 12"-20" DIA. L=2 7/8" <u>+</u> 22"-36" DIA. L=3 1/4" <u>+</u> | | | X | | | | |
| LONGITUDINAL SEAMS | | | X | | | | |
| LAP, SPOTWELD AND SEAL | | | X | | | | |
| RL−2 | | | X | | | | |
| | | | X | | | | |
| LENGTH (6" MINIMUM) | | | | | | | |
| OFFSET X 2 | | | | | | | |

#67-90 FIELD MOUNTED STRAIGHT TAP ON ROUND



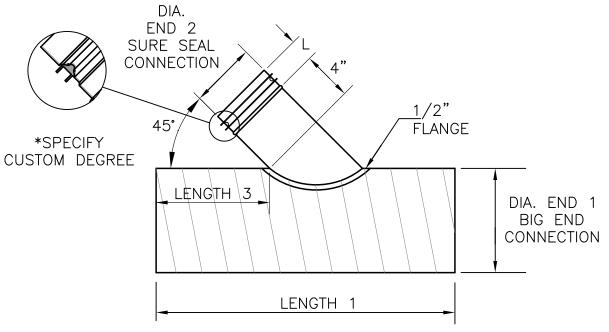
| <u>TAG</u> | QTY. | DIA. END 1 | <u>PIPE DIA.</u> |
|------------|------------|------------|---------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | <u>TAG</u> | TAG QTY. | TAG QTY. DIA. END 1 |

#67 FIELD MOUNTED LATERAL TAP



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | <u>QTY.</u> | DIA. END 1 | <u>PIPE DIA.</u> |
|---|------------|-------------|------------|------------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | |
| TRANSVERSE JOINT | | | | |
| SMALL END SLIP CONNECTION | | | | |
| 3"-11" DIA. L=2 1/2 <u>"</u> 12"-20" DIA. L=2 7/8" <u>+</u> | | | | |
| 22"-36" DIA. L=3 $1/4$ " \pm | | | | |
| LONGITUDINAL SEAMS | | | | |
| LAP, SPOTWELD AND SEAL | | | | |
| PI 2 | | | | |

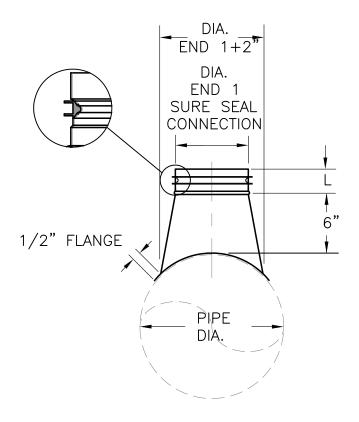
#54S LATERAL SHOP MOUNTED



| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 | DIA. END 2 | LENGTH 1 | LENGTH 3 |
|---|------------|------|---------------|---------------|----------|----------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | | | | |
| 3"-11" DIA. L=2 $1/2$ ± $12"-20"$ DIA. L=2 $7/8"$ ± $22"-36"$ DIA. L=3 $1/4"$ ± | | | | | | |
| LATERAL LONGITUDINAL SEAM LAP, SPOTWELD AND SEAL | | | | | | |
| RL-2 | | | | | | |
| BODY LONGITUDINAL SEAM SPIRAL SEAM | | | | | | |
| RL-1 www.lanc | ıdonsheeti | | | | | |

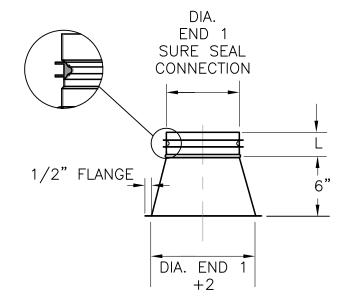
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#56T CONICAL TAP ON ROUND



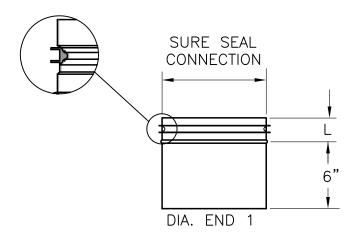
| <u>TAG</u> | QTY. | DIA. END 1 | PIPE DIA. |
|------------|------|------------|-------------------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | TAG | TAG QTY. | TAG QTY. DIA. END 1 |

#57T CONICAL TAP ON RECTANGULAR DUCTWORK



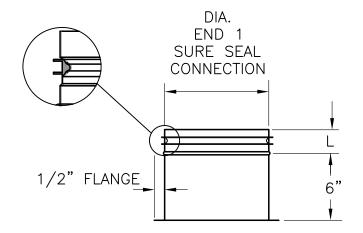
| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | DIA. END 1 |
|---|------------|------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | |
| $3"-11"$ DIA. L=2 $1/2\frac{+}{2}$ 12"-20" DIA. L=2 $7/8$ "± 22"-36" DIA. L=3 $1/4$ " ± | | | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | | | |
| RL-2 | | | |

#100C EQUIPMENT COLLAR-(HOODS, AIR VALVES, ECT.)



| SYSTEM NUMBER/AREA : | <u>TAG</u> | <u>QTY.</u> | DIA. END 1 |
|---|------------|-------------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | |
| $3"-11"$ DIA. L=2 $1/2$ \pm 12"-20" DIA. L=2 $7/8$ " \pm 22"-36" DIA. L=3 $1/4$ " \pm | | | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | | | |
| RL-2 | | | |
| | | | |
| | | | |

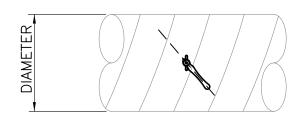
#100T FIELD MOUNTED STRAIGHT TAP ON RECTANGULAR

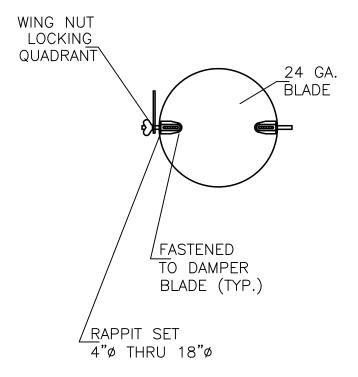


| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | TAG | QTY. | DIA. END 1 |
|--|-----|------|------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT SMALL END SLIP CONNECTION | | | |
| 3"-11" DIA. L=2 1/2 <u>+</u> 12"-20" DIA. L=2 7/8" <u>+</u> 22"-36" DIA. L=3 1/4" <u>+</u> | | | |
| LONGITUDINAL SEAMS | | | |
| LAP, SPOTWELD AND SEAL | | | |
| | | | |

SUBMITTAL SPIRAL FITTINGS

MANUAL VOLUME DAMPER 4"\$\varphi\$ TO 18"\$\varphi\$





| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | <u>TAG</u> | QTY. | <u>DIAMETER</u> |
|--|------------|------|-----------------|
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS | | | |
| TRANSVERSE JOINT | | | |
| SMALL END SLIP CONNECTION | | | |
| LONGITUDINAL SEAMS | | | |
| LAP, SPOTWELD AND SEAL | | | |
| RL-2 | | | |
| " | | | |
| STANDARD SIZES 4"Ø THRU 18"Ø | | | |

MANUAL VOLUME DAMPER 4"\$\opi\$ TO 18"\$\opi\$ (EVEN SIZES)

| 6" LONG (4"ø-10"ø) 12" LONG (12"ø-18"ø) 20 GA. SLEEVE (20"ø-30"ø) | 1 1/2" LONG STAND OFF 3/8" LOCKING QUADRANT BLADE |
|---|--|
| SURE SEAL GASKET (TYP.) | SPOT WELD TO DAMPER BLADE (TYP.) 3/8" SQUARE END BEARING & NYLON BUSHING (TYP.) CONTINUOUS ROD |
| | 14"ø THRU 18"ø 1/2" HARDWARE W/CONTINUOUS ROD |
| SYSTEM NUMBER/AREA : MATERIAL/STATIC WG : | SPECIFY BLADE GA. 20"Ø THRU 30"Ø |
| FABRICATE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARD | S — QTY. DIAMETER |
| TRANSVERSE JOINT SURE SEAL GASKET | |
| $3"-11"$ DIA. L=2 $1/2$ $\frac{+}{2}$ 12"-20" DIA. L=2 $7/8$ " $\frac{+}{2}$ 22"-36" DIA. L=3 $1/4$ " $\frac{+}{2}$ | |
| <u>LONGITUDINAL SEAMS</u> LAP, SPOTWELD AND SEAL | |
| RL-2 | |
| STANDARD SIZES 4"Ø THRU 30"Ø | |