

INSTALLATION INSTRUCTIONS

H FLANGE & J FLANGE



1. CUTTING THE ANGLE

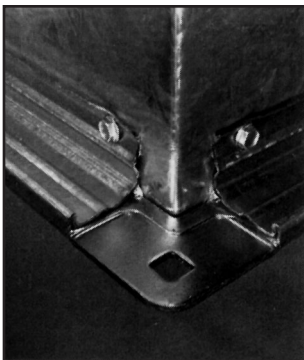
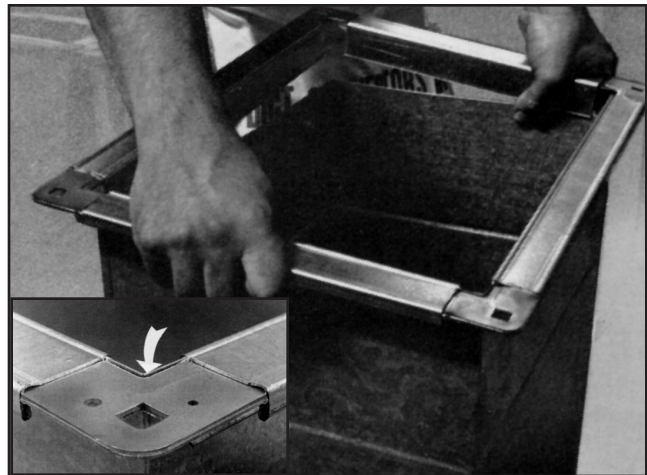
The angle should be cut $1 \frac{5}{16}$ " shorter than the duct dimensions, cutting the angle with the spine pointing up. Using a chop saw with a 3 h.p. motor and a metal cutting blade helps to insure a clean edge with no burrs.

2. FRAME ASSEMBLY AND SEATING

Using a mallet, insert the corners into the shorter angles; install the larger angles to complete the frame. The raised portion of the corner should be facing inward with the "Ward" name visible from the outside.

Starting at a corner, using a mallet, hammer the completed frame onto the raw edge of the duct section. Moving in one direction, make sure the duct is seated into the mastic.

NOTE: The duct section should not be notched.



3. FASTENING THE FRAME

The frame can be fastened to the ductwork with either Hex Tex screws ($10 \times 3/4$) or spot welds.

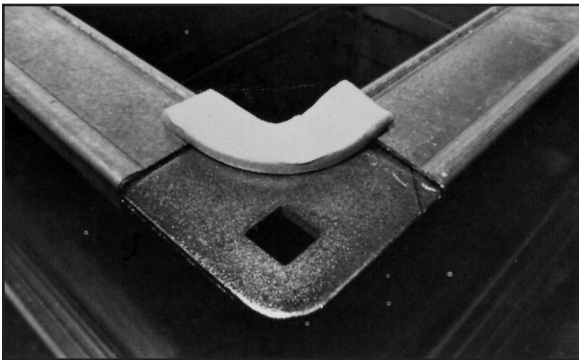
NOTE: On installations of 3" s.p. or above or on systems where leakage is to be less than 1%, spot welding is recommended.

Tek screwing of the angle or spot welding must start within $3/4$ " of each end of the angle at the duct section corners.

(See Chart on next page.)

Important: since sheet metal ductwork installations are sometimes used by the other trades as scaffolding, actual job conditions should really dictate the amount of spot welding and tek screwing.

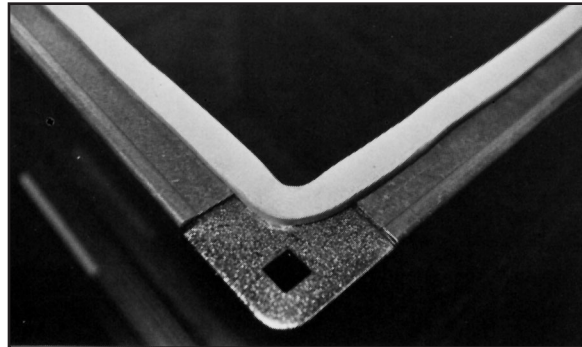
STATIC PRESSURE	DUCT SIZE	RECOMMENDED CENTERS
1/2" to 1"	To 48" 49" to 96" Over 96"	At 4 corners & centerline 30" centers 18" centers
1" to 2"	To 42" 43" to 96" Over 96"	At 4 corners & centerline 18" centers 12" centers
2" to 3"	To 36" 37" to 72" Over 72"	At 4 corners & centerline 18" centers 12" centers
3" to 6"	To 24" 25" to 60" Over 60"	At 4 corners & centerline 18" centers 12" centers
Over 6"	To 18" 19" to 48" Over 48"	At 4 corners & centerline 12" centers 8" centers



4. GASKET APPLICATION

Apply a 2 to 3" strip of gasket on the 4 exposed corners of one frame, as pictured.

Starting at the center of the other mating frame, apply a single strip of gasket completely around the inside edge of the frame. **IMPORTANT:** This gasket must also cover the exposed edge of the duct section and the gap between the duct wall and the corner.



NOTE: On installations where the operating pressures are 4" or higher and the leakage requirements are less than 3% special care must be given to the treatment of the corners. Special butyl patches (2" x 3") are available.

5. INSTALLING THE CLEAT

Snap a 4" piece of either metal or PVC cleat over the mating frames, using the following recommendations:

- 1/2" to 2" sp — 1 piece on 24" centers
- 2" to 3" sp — 1 piece on 18" centers
- 4" to 6" sp — 1 piece on 12" centers
- Over 10" sp — continuous cleat



Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

Report To: Ward Industries
1001 Lebanon Church Rd.
Pittsburgh, PA 15236
Attn: Lou Ward

Project: LN PHY-21119 828-26235

Report Of: Witnessing of Pressure
Test on Duct Assemblies

Date: 6-8-92

On June 5, 1992, a representative of PSI/Pittsburgh Testing Laboratory, Mr. J. Peter Merther, visited the JWP Brandt Co. in Dallas, Texas to witness testing of a duct section as described below.

The duct system was reinforced as indicated below and per sketch attached.

The following is a description of duct assembly and results of the testing, SMACRA test procedures were used as a guideline.

Duct Size: 108" wide x 58" deep 18Ga.
Duct Length: 5' (60") Sections
Flange Connector: Ward J Connector
Reinforcement: 2" x 2" x 3/16" angle (see sketch for location and spacing)

3/8" threaded rod in 1/2" conduit (sketch for location and spacing)

Results: 10" Positive Water Pressure

Flange Deflection: 1/4" at 10"

No structural failure or leakage

Residual Deflection at 0": 1/32"

At 12" & 16" Positive Pressure no structural failure or leakage

10" Negative Water Pressure

Flange Deflection: 3/16" at 10"

No structural failure

Test Witnessed By:

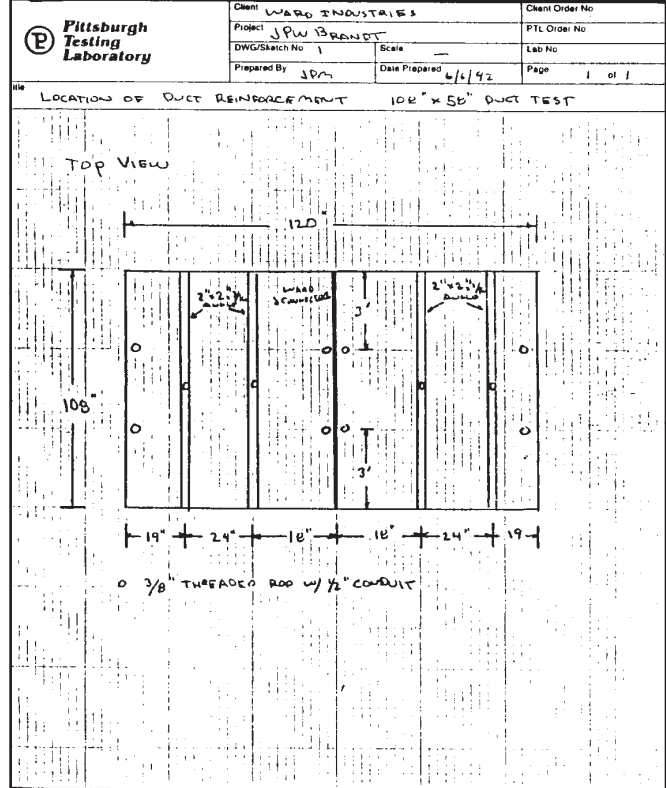
J. Peter Merther
J. Peter Merther, P.E.
Staff Engineer

PROFESSIONAL SERVICE INDUSTRIES, INC.

Gregory W. McKewan
Gregory W. McKewan
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The following is a description of duct assembly and results of the testing, SMACRA test procedures were used as a guideline.

Duct Size: 120" wide x 42" deep 16Ga. Stainless
Duct Length: 4' (48") Sections
Flange Connector: Ward J Stainless Connector
Reinforcement: 1" Conduit welded to 4" plates (see sketch for location and spacing)

Flange connector welded to duct at 6" o.c. horizontal and vertical seams

Results: 10" Negative Water Pressure

Flange Deflection: 1/16" at 10"

No structural failure

At 12" Negative Water Pressure

No structural failure

Test Witnessed By:

J. Peter Merther
J. Peter Merther, P.E.
Staff Engineer

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