Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 10/10/2023
Return Request: 10/16/2023
Project: ASU Mid-South RC & UC Chiller Replacement
Supplier: Control Heating & Cooling
Manufacturer: Various
Submittal: HVAC Ducts & Casings
Submittal Number: 23 31 00-01
Drawing # and Installation: Mechanical Drawings

ARCHITECT
Witsell Evans Rasco
901 W. Third Street
Little Rock, AR 72201
501-374-5300

ENGINEER
Pettit & Pettit
201 E. Markham St. #400
Little Rock, AR 72201
501-374-3731

GENERAL CONTRACTOR
Baldwin & Shell
3725 Champion Hills Driver, Suite 1300
Memphis, TN 38125
901-755-2952

MECHANICAL SUBCONTRACTOR
Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.
23-1024
jon@comfortar.com

Control Heating & Cooling, Inc
6000 Krueger Drive
Jonesboro, AR 72401
Phone: (870) 935-3693
Fax: (870) 935-4031

Submittal Transmittal

TO: Comfort Systems, Inc.
PO Box 16620
Little Rock, AR 72231

Date:	8/28/2023
Project	- ASU Mid-South Chiller Replace
Submittal #	ONE
ATTN:	Jon Davis
RE:	HVAC Ducts

We are sending you the following: ☐ Attached ☐ Under Separate Cover

Via: ☐ 1st Class Mail ☐ Overnight ☐ Facsimile ☐ Pick-Up/Hand Deliver

Copies	Spec No.	Description
1	23 0500	Duct Sealant: Hardcast 321
1	23 3100	Grease Duct: Metal-Fab - 3G
1	23 3114	Sheet Metal Materials: Galvanized G-90
1	23 3114	Manual Damper with Take-off Fitting: Air Tite

Remarks: _____

_____

_____

DUCT-SEAL™ 321

Indoor/Outdoor Water Based Duct Sealant

DUCT-SEAL 321 is an **all purpose industrial grade duct sealant** for all types of metal duct, glass fiber duct board, and flex duct, as well as duct fabric and flexible tubing runouts. It includes UV inhibitors for **extended outdoor exposure** and built-in **fiber reinforcement** for **added strength.** This non-toxic water based product is solvent free and is suitable for residential use.

TECHNICAL DATA

Color	Gray
Consistency	Smooth creamy texture
Base	Synthetic latex
Solvent	Water
Weight per Gallon	10.6 lbs.
Solids Content	65%
Viscosity	Thixotropic
Coverage (per gal)	Up to 320 lin. ft. at 3" width 20 mil thickness
Shore A Hardness	>20
Flexibility	Passes ¼ inch mandrel bend
Time to Test	48 hours*
Service Temperature	-20°F to 200°F (-29°C to 34°C)
Weather Resistance	Weather resistant
Mildew Resistance	Mold & Mildew resistant
VOC (less water)	57.2 g/l (less water)
Pressure Classes	SMACNA ½, 1, 2, 3, 4, 6 and 10 inches w.g.
Seal Classes	SMACNA A, B, C
Packaging	11 oz. cart.(0.32 Ltr.), 1 US gal. pail (3.78 Ltr.), 2 US gal. pail (7.56 Ltr.), 5 US gal. pail (18.9 Ltr.)
Freeze/Thaw Stability	Passed 5 Cycles
Specifications Compliance	Passes ASTM D-2202, ASTM C-731. USDA, EPA and FDA Approved. LEED compliant SCAQMD Rule 1168.

*May vary according to temperature and humidity

CLASSIFIED C UL US

CAULKING AND SEALANTS
94PF
SURFACE BURNING CHARACTERISTICS
FLAME SPREAD..... 0
SMOKE DEVELOPED..... 0

*Applied to inorganic reinforced Cement Board *Tested as applied in one 3 in. (76.2 mm) wide strip, on center covering 16.7 percent of the exposed test sample area) at a coverage of 80 sq. ft/ gal (2 sq. M/L). Flash point of finished sealant, closed cup : No flash to boiling.

UL LISTED

17NF
UL 181B-M
Mastic closure systems for use with flexible duct systems or connectors.

City of Los Angeles Approval RR #8069

PRECAUTIONS

Surface must be clean and free of moisture, contamination and foreign matter. Do not allow this product to freeze. Apply when temperatures will not fall below freezing for at least 36-48 hours, depending on temperature and humidity. Do not apply this product where temperatures will exceed 200°F. Keep out of the reach of children. Review MSDS for complete safety information prior to use. DO NOT use where acidic or alkaline chemicals are present (ie., lab fume hood, vents, etc.)

For Industrial Professional Use Only.

DUCT-SEAL 321 PART NUMBERS

1 Case w/ (25) 11 oz. (0.32 Ltr.) Cartridges	304159
1 Case w/ (4) 1-Gallon (3.78 Ltr.) Pails	304156
1 - 2-Gallon (7.56 Ltr.) Pail	304157
1 - 5-Gallon (18.9 Ltr.)Pail	304158

APPLICATION

Temperature	35°F. to 110°F. (1.7°C to 44°C)
Method	Brush, putty knife, caulk gun, pump
Preparation	Surface must be dry, dirt, oil and grease free.
Rate	Apply at joints and fasteners to 20 mil thick wet film
Clean Up Wet	Soap and water
Clean Up Dry	UN-TACK™ or Solvent (Use safe handling practices.)
Painting	Only latex or epoxy paints

STORAGE

Temperature	35°F. to 110°F. (1.7°C to 44°C) DO NOT FREEZE
Shelf Life	One year (unopened)
Flammability	Non-flammable

Contributes to LEED® Credit Requirements

USDA, EPA & FDA APPROVED

For additional information contact:

HARDCAST® CARLISLE

900 Hensley Lane
Wylie, Texas 75098
Phone: (800) 527-7092 FAX: (972) 442-0076
www.hardcast.com

METAL-FAB® INC.

G Series™

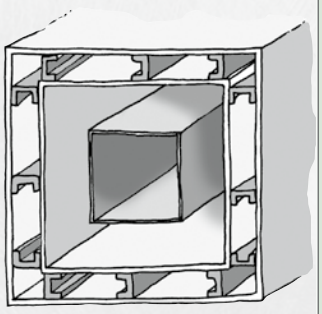
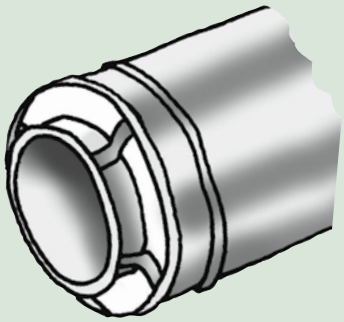
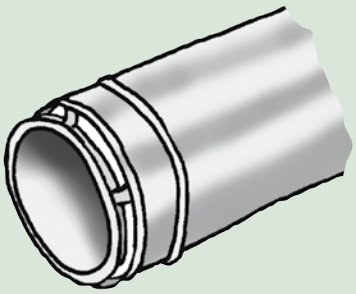
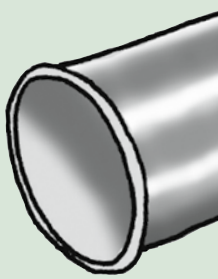
Factory-Built Grease Duct Systems

More Choices
Best Value
Code Compliant

June 2013 Edition

Design Manual

Making The Right

DESCRIPTION	METAL-FAB "G" SERIES		
	FIRE RESISTIVE SHAFT ENCLOSURE Site - Built	**Models 3G / 4G** ALTERNATE TO FIRE RESISTIVE SHAFT ENCLOSURE Factory - Built	**Models PIC / 1G / 2G** REDUCED CLEARANCE TO COMBUSTIBLES Factory - Built	**Models P** SINGLE WA STAINLESS S Factory - Bu
				
INSTALLED SPACE REQUIREMENTS 12" X 12" SQUARE DUCTS - 144 SQ. IN. 14" ROUND DUCT - 154 SQ. IN.	33" X 33"	20" X 20"	20"/22" X 20"/22"	50" X 50"
CONSTRUCTION	Shaft Enclosure - Fire rated gypsum board on both sides of non combustible studs. Grease Duct - 16 gage Carbon Steel or 18 gage Stainless Steel	Outer Casing (Integral Shaft enclosure) Aluminized Carbon or Stainless Steel Insulation: 3" or 4" Ceramic Fiber Grease Duct - 20 gage Stainless Steel	Outer Casing -Aluminized Carbon or Stainless Steel Insulation: Air, 1" or 2" Ceramic Fiber Grease Duct - 20 gage Stainless Steel	Grease Duct - 20 gage S
CLEARANCES	6 Inches to inner shaft wall	Zero Clearance to Combustibles Zero Clearance to Limited Combustibles	See Chart for Reduced Clearances on page 8	18 Inches to Comb 3 Inches to Limited C
CURRENT CODE ACCEPTANCE	YES 2009 IMC, 506.3.10.1 2006 UMC, 510.7.2.3 2008 NFPA 96, 7.7.2.2.2	YES 2009 IMC, 506.3.10.3 2006 UMC, 507.2.3 2008 NFPA 96, 4.3 New York City: MEA-86-07-E Los Angeles: RR-8441 Wisconsin: 990074-H	YES 2009 IMC, 506.3.6-1 2006 UMC, 507.2.1 2008 NFPA 96, 7.1.7 New York City: MEA-245-97-M	YES 2009 IMC, 506 2006 UMC, 50 2008 NFPA 96,
APPLICABLE LISTINGS	ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction	UL1978 - Standard for Grease Ducts UL2221 - Tests of Fire Resistive Duct Enclosures ASTM E 814 - Standard Test Method for Through Penetration Firestops ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction ESR 2627 ICC ES Acceptance Criteria for Grease Duct Systems, Self Enclosed	UL1978 - Standard for Grease Ducts	UL1978 - Standard for
INSTALLED COSTS	$ $ $ $ $	$ $ $	$ $	$
WARRANTY	1 Year	LIMITED LIFETIME	LIMITED LIFETIME	LIMITED LIFE

Choice For Your Client

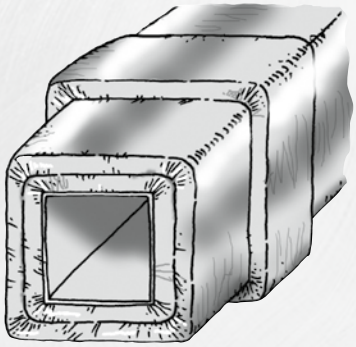
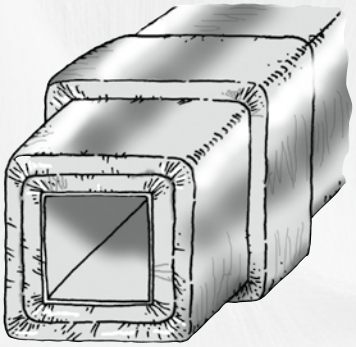
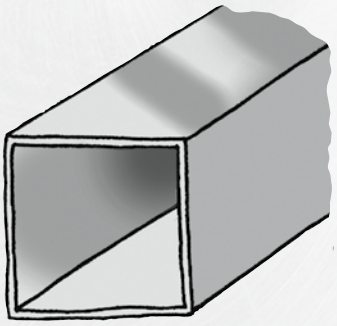
	ALTERNATE TO FIRE RESISTIVE SHAFT ENCLOSURE Site - Built	REDUCED CLEARANCE TO COMBUSTIBLES Site - Built	ABANDONED UL1978 - SBCCI SINGLE LAYER WRAP SYSTEMS Site - Built	FIRE RESISTIVE SHAFT NOT REQUIRED Site - Built
				
	24" X 24"	24" X 24"		48" X 48"
Stainless Steel	Exposed 2-3 layers of 1 1/2" or 2" Flexible wrap, taped, pinned and banded to grease duct Grease Duct - 16 gage Carbon Steel or 18 gage Stainless Steel	Exposed 2-3 layers of 1 1/2" or 2" Flexible wrap, taped, pinned and banded to grease duct Grease Duct - 16 gage Carbon Steel or 18 gage Stainless Steel	Single layer 1 1/2" or 2" Flexible Wrap insulation, applied to Grease Duct for reduced clearances Grease Duct - 16 gage Carbon Steel or 18 gage Stainless Steel	Grease Duct - 16 gage Carbon Steel or 18 gage Stainless Steel
ombustibles	Zero Clearance to Combustibles Zero Clearance to Limited Combustibles	For Clearances less than 18 Inches		18 Inches to Combustibles 3 Inches to Limited Combustibles
6.3.6 7.2.1 7.1.7	YES 2009 IMC, 506.3.10.2 2006 UMC, 507.2.3 2008 NFPA 96, 4.3	YES 2009 IMC, 506.3.6 NOTE: UMC & NFPA do not address clearance reduction utilizing flexible wraps	NO All Flexible wrap listings referencing UL 1978 have been withdrawn	YES 2009 IMC, 506.3.6 2006 UMC 507.2.1
Grease Ducts	ASTM E 2336-04 - Standard Test Methods For Fire Resistive Grease Duct Systems The Following ICC-ESR reports are in compliance with ASTM E2336-04 ESR-1255: 3M Fire Barrier 20A ESR-2213: Thermal Ceramics Firemaster FastWrap XL ESR-2832: Thermal Ceramics Pyroscat Duct Wrap XL ESR-2224: Unifrax Fyrewrap Max 2.0 & Fyrewrap Elite 1.5	ASTM E 2336-04 - Standard Test Methods For Fire Resistive Grease Duct Systems All Flexible wrap systems must be installed per their ASTM E 2336-04 listing The Following ICC-ESR reports are in compliance with ASTM E2336-04 ESR-1255: 3M Fire Barrier 20A ESR-2213: Thermal Ceramics Firemaster FastWrap XL ESR-2832: Thermal Ceramics Pyroscat Duct Wrap XL ESR-2224: Unifrax Fyrewrap Max 2.0 & Fyrewrap Elite 1.5	Earlier versions of ICBO, IAPMO, SBCCI BOCA, ICC or other codes that require any materials used to reduce clearances to combustibles be "Listed to a nationally recognized Standard" must now be installed to ASTM E2336-04.	
	$ $ $ $	$ $ $ $		$
TIME	Duct - 1 Year Insulation: 90 days - 1 Year	Duct - 1 Year Insulation: 90 days - 1 Year		Duct - 1 Year

CHART FOR REDUCED CLEARANCES

4G 4" Insulation
6" - 38" Diameter - 0"
40" - 48" Diameter - 1"

3G 3" Insulation
6" - 36" Diameter - 0"

PSW Single Wall
6" - 48" Diameter - 18"

2G 2" Insulation
6" - 18" Diameter - 1"
20" - 32" Diameter - 2"
34" - 40" Diameter - 3"
44" - 48" Diameter - 4"

1G 1" Insulation
6" Diameter - 2"
8" - 18" Diameter - 3"
20" - 32" Diameter - 4"
34" - 42" Diameter - 5"
44" - 48" Diameter - 6"

PIC 1" Air Space
6" - 10" Diameter - 5"
12" Diameter - 7"
14" Diameter - 9"
16" Diameter - 10"
18" Diameter - 12"
20" Diameter - 14"
22" - 48" Diameter - 18"

TABLE OF CONTENTS

MODEL CODES

ICC: International Code Council
The ICC is a not-for-profit organization established by the International Conference of Building Officials, Building Officials and Code Administrators International, and the Southern Building Code Congress International to create a single set of comprehensive and coordinated international codes. This set is called the International Codes. ICBO, BOCA, and SBCCI no longer publish separate codes. Codes regarding chimneys and vents are in the 2006 International Mechanical Code (IMC).

IAPMO: International Association of Plumbing & Mechanical Officials
IAPMO publishes the Uniform Plumbing Code© (UPC), Uniform Mechanical Code© (UMC), and a number of other life safety codes. IAPMO is most recognized for their development of the Uniform Plumbing Code.

NFPA: National Fire Protection Association
NFPA develops codes and standards for fire safety. There are over 300 NFPA codes and standards.

STANDARDS/LISTINGS/CLASSIFICATIONS

NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
UL1978	Test Standard For Grease Ducts
UL HNOB	Classification for “Grease Duct Assemblies” (Metal-Fab File No. R15388)
UL 2221	Tests of Fire Resistive Duct Enclosure Assemblies
UL 103	Standard For Safety, Factory-Built Chimneys for Residential and Building Heating Appliances
ASTM E119	Standard Test Methods for Fire Tests for Building Construction and Materials
ASTM E814	Standard Test Method for Through-Penetration Fire Stops
AC121	ICC-ES Acceptance Criteria For Grease Duct Systems, Self-Enclosed
ICC-ES	Evaluation Report No. ESR-2627*

* See Evaluation Report for allowable values and/or conditions of use.

GENERAL INFORMATION

Pertinent information is consolidated in this publication to assist you with application information, codes and standards, dimensional information, support requirements and other data of special interest. It is our goal to enable you to select the proper product to meet the requirements of your project confidently and efficiently. For additional information you may contact us via:

Web Sites: www.metal-fabcommercial.com / www.greaseduct.com
Telephone: 316-943-2351
Toll Free Phone: 800-835-2830
Fax: 316-771-4168
E-mail: info@metal-fabinc.com

Complete information for proper and safe installations is found in the Metal-Fab Installation Instructions for each product.

Factory-Built G Series Grease Duct Systems are suitable for venting Type I and Type II kitchen ventilation hoods. G Series systems are manufactured in a controlled environment to exacting standards. No other product has been so thoroughly tested and determined to be in compliance with more codes.

NOTE: Dimensions are American Standard (feet & inches), with metric in parenthesis except where stated otherwise. Always consult appliance installation instructions for exhaust temperatures, pressures, and operating conditions. Appliance manufacturer may limit horizontal runs, elbows, offsets, vertical heights, etc.

CODE COMPLIANCE DATA						
PRODUCT MODEL	4G (IPIC-4G)	3G (IPIC-3)	2G (IPIC-2)	1G (IPIC-1)	PIC	PSW
ULFile No. MH25506	X	X	X	X	X	X
NFPA 96	X	X	X	X	X	X
UL 1978	X	X	X	X	X	X
UL HNOB.15388	3 Hr.	2 Hr.				
UL 2221	2 Hr.	2 Hr.				
ASTM E 119-Fire Engulfment	3 Hr.	2 Hr.				
ASTM E 119-Fire Resistance	2 Hr.					
ASTM E814-Fire Stop F&T	3 Hr.	3 Hr.				
ICBO AC121	X					
ICBO ER 5301 / ICC-ES ESR-2627	X					
SBCCI Eval Guide ON Fire Res. Const.	X					
City of New York MEA 86-07-E	X					
City of Los Angeles RR-8441	X					
State of Wisconsin 990074-H	X					

MATERIAL SELECTIONS	
FLUE	**CASING**
304 Stainless Steel	Aluminized Steel
316 Stainless Steel	304 Stainless Steel
430 Stainless Steel	316 Stainless Steel

TEMPERATURE RATING	
Continuous	**500°F** (271)
Intermittent	**2000°F** (1084)

MATERIAL THICKNESS						
Flue	**4G**	**3G**	**2G**	**1G**	**PIC**	**PSW**
6-36 (152-194)	**.035** (.9)	**.035** (.9)	**.035** (.9)	**.035** (.9)	**.035** (.9)	**.035** (.9)
38-48 (965-1219)	**.048** (1.2)	**N/A**	**.048** (1.2)	**.048** (1.2)	**.048** (1.2)	**.048** (1.2)
Casing – (Based on Flue Diameter)						
6"-18" (152-457)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	**Not Applicable**
20"(508)	**.034"**(.9)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	
22"(559)	**.034"**(.9)	**.034"**(.9)	**.024"**(.6)	**.024"**(.6)	**.024"**(.6)	
24"(610)	**.034"**(.9)	**.034"**(.9)	**.034"**(.9)	**.024"**(.6)	**.024"**(.6)	
26"-36" (660-914)	**.034"**(.9)	**N/A**	**.034"**(.9)	**.034"**(.9)	**.034"**(.9)	
38"-48" (965-1219)	**.034"**(.9)	**N/A**	**.034"**(.9)	**.034"**(.9)	**.034"**(.9)	

INSULATION THICKNESS					
4G	3G	2G	1G	PIC	PSW
4" Ceramic	3" Ceramic	2" Ceramic	1" Ceramic	1" Air Space	None

CASING TEMPERATURE CHART						
500F Operating Temperature						
Temperature Rise Degrees F Above Ambient						
Flue Diameter-Inches	4G	3G	2G	1G	PIC	PSW
6	30	30	64	102	252	N/A
12	38	38	70	109	252	N/A
18	43	43	75	114	252	N/A
24	49	49	78	118	252	N/A
30	58		83	121	252	N/A
36	64		87	126	252	N/A
			(Values are approximate)			

DEFINITIONS – NFPA

Access Panel. A closure device used to cover an opening into a duct, an enclosure, equipment or an appurtenance.

Authority Having Jurisdiction (AHJ). An organization, office, or individual responsible for enforcing the requirements of a code or standard, or for approving equipment, materials, an installation, or a procedure.

Classified. Products or materials of a specific group category that are constructed, inspected, tested and subsequently reinspected in accordance with an established set of requirements. The classification process is performed by an organization acceptable to the authority having jurisdiction.

Combustible Material. A material capable of undergoing combustion.

Continuous Enclosure. A recognized architectural or mechanical component of a building having a fire resistance rating as required for the structure and whose purpose is to enclose the vapor removal duct for its full length to its termination point outside the structure without any portion of the enclosure having a fire resistance rating less than the required value.

Continuous Weld. A metal-joining method that produces a product without visible interruption or variation in quality.

Factory-Built Grease Duct Enclosures. A listed factory-built grease duct system evaluated as an enclosure system for reduced clearances to combustibles and as an alternative to a duct with its fire-rated enclosure.

Field-Applied Grease Duct Enclosure. A listed system evaluated for reduced clearances to combustibles and as an alternative to a duct with its fire-rated enclosure.

Grease. Rendered animal fat, vegetable shortening, and other such oily matter used for the purposes of and resulting from cooking and/or preparing foods.

Grease Ducts. A containment system for the transportation of air and grease vapors that is designed and installed to reduce the possibility of the accumulation of combustible condensation and the occurrence of damage if a fire occurs within the system.

Grease-Tight. Constructed and performing in such a manner as not to permit the passage of any grease under normal cooking conditions.

Hood. A device provided for a cooking appliance(s) to direct and capture grease-laden vapors and exhaust gases.

Liquid-Tight. Constructed and performing in such a manner as not to permit the passage of any liquid at any temperature.

DEFINITIONS (CONTINUED)

Listed Equipment. Materials, or services included in a list published by an organization that is acceptable to the authority having jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production of listed equipment or materials or periodic evaluation of services, and whose listing states that either the equipment, material, or service meets appropriate designated standards or has been tested and found suitable for a specified purpose.

Noncombustible Material. A material not capable of supporting combustion.

Standard. A document, the main text of which contains only mandatory provisions using the word "shall" to indicate requirements and which is in a form generally suitable for mandatory reference by another standard or code or for adoption into law. Nonmandatory provisions shall be located in an appendix or annex, footnote, or fine-print note and are not to be considered a part of the requirements of a standard.

CLEARANCES

NOTE: All clearances shown in this table comply with UL listings and classifications.

UL Listed/Classified Grease Duct Clearance to Combustibles						
Inside Duct Diameters	Models					
	4G	3G	2G	1G	PIC	PSW
6" (152)	0"	0"	1" (25)	2" (51)	5" (127)	18" (457)
8" (203)	0"	0"	1" (25)	3" (76)	5" (127)	18" (457)
10" (250)	0"	0"	1" (25)	3" (76)	5" (127)	18" (457)
12" (305)	0"	0"	1" (25)	3" (76)	7" (178)	18" (457)
14" (356)	0"	0"	1" (25)	3" (76)	9" (229)	18" (457)
16" (406)	0"	0"	1" (25)	3" (76)	10" (250)	18" (457)
18" (457)	0"	0"	1" (25)	3" (76)	12" (305)	18" (457)
20" (508)	0"	0"	2" (51)	4" (102)	14" (356)	18" (457)
22"-24" (559-610)	0"	0"	2" (51)	4" (102)	18" (457)	18" (457)
26"-32" (660-813)	0"	N/A	2" (51)	4" (102)	18" (457)	18" (457)
34"-38" (864-914)	0"	N/A	3" (76)	5" (127)	18" (457)	18" (457)
40"-42" (965-1067)	1" (25)	N/A	3" (76)	5" (127)	18" (457)	18" (457)
44"-48" (1118-1219)	1" (25)	N/A	4" (102)	6" (152)	18" (457)	18" (457)
Clearance to Non-Combustibles: 0", all products						

DESIGN CONSIDERATIONS

NFPA 96 requires provisions for inspection of, and access for, cleaning of grease ducts. Openings are to be located on the top or side of the duct at changes of direction, to access and inspect fire suppression components within the duct, within 3 ft. of the inlet and outlet of any inline fan. Horizontal portions of ducts 20 inches by 20 inches or larger shall provide at least one opening for personnel entry. Smaller horizontal ducts shall provide openings large enough for cleaning at 12 ft. intervals. Refer to NFPA 96, section 7 for complete information.

Duct Slope. Nationally recognized codes require horizontal ducts to slope at a minimum of 1/4 unit vertical in 12 units of horizontal toward the hood or grease reservoir. In addition, where horizontal ducts exceed 75 feet in length, the slope shall not be less than one unit vertical in 12 units horizontal. This general rule for duct slope is prescribed for grease ducts that are not listed and/or evaluated by an accredited third body testing agency. For factory-built grease ducts that are listed to UL1978 and have been further tested and/or analyzed to provide equivalent or better flow characteristics as compared to field-installed grease ducts, reduce duct slope is allowed per the factory-built grease duct listing.

For Metal-Fab factory built grease ducts listed to UL1978, install at a duct slope not less than 1/16 unit vertical slope in 12 units of horizontal toward the hood or toward the grease reservoir. Where Metal-Fab grease ducts listed to UL1978 exceed 75 feet in length, the slope shall not be less than 1/4 unit vertical slope in 12 units horizontal. This minimum slope is a result of tests and analysis performed by Underwriters Laboratories, where factory-built grease duct was compared to rectangular field-applied grease duct for performance of flow characteristics. Consult with AHJ for acceptance of this alternate method.

DESIGN CONSIDERATIONS (CONTINUED)

Thermal Expansion. A change in temperature within a duct system, site-built or factory-built, causes thermal expansion of the duct. For example, when a grease duct temperature increases from ambient to a normal operating temperature of 75°F plus ambient, the duct expands 0.375 inches per 50 feet of duct length. Greater expansion and contraction under normal operating temperatures can fatigue welds causing leakage. If expansion is computed to exceed 0.375 inches between changes of direction or rigid supports, an Adjustable length (AL) should be installed.

The formula for computing expansion is:

[Length (feet)/100] X [Temperature Rise (°F) /100]
Example: 50'/100 X 75°F/100 = 0.375 inches

SUPPORT DATA

SUPPORTS - VERTICAL	Maximum Supported Height					
PRODUCT	4G	3G	2G	1G	PIC	PSW
Plate Support (PS)	73' (22.3m)	73' (22.3m)	75' (22.9m)	85' (25.9m)	100' (30.5m)	100' (30.5m)
Roof Support Assembly (RSA)	22' (6.7m)	22' (6.7m)	22' (6.7m)	25' (7.6m)	30' (9.1m)	30' (9.1m)
Wall Support (WS)	29' (8.8m)	29' (8.8m)	30' (9.1m)	34' (10.4m)	40' (12.2m)	40' (12.2m)
Stack Support Assembly (SSA)	100' (30.5m)	100' (30.5m)	100' (30.5m)	100' (30.5m)	100' (30.5m)	100' (30.5m)
Pier or Structural Support	73' (22.3m)	73' (22.3m)	75' (22.9m)	85' (25.9m)	100' (30.5m)	100' (30.5m)

Values shown are the maximum distance between supports. Guides are also required.
Maximum installed height is 200'.

GUIDES - HORIZONTAL	Maximum Spacing-Horizontal					
(See Components Section for guide selection)						
PRODUCT	4G	3G	2G	1G	PIC	PSW
Component Choices:						
Half Angle Ring (HAR)	9' (2.7m)	9' (2.7m)	9' (2.7m)	10' (3.1m)	12' 6" (3.8m)	12' 6" (3.8m)
Full Angle Ring (FAR)	9' (2.7m)	9' (2.7m)	9' (2.7m)	10' (3.1m)	12' 6" (3.8m)	12' 6" (3.8m)
Plate Support (PS)	9' (2.7m)	9' (2.7m)	9' (2.7m)	10' (3.1m)	12' 6" (3.8m)	12' 6" (3.8m)

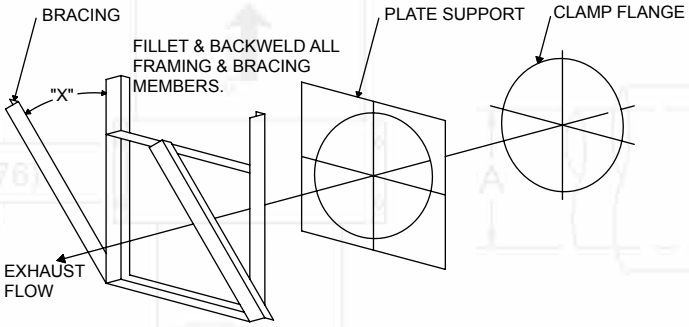
GUIDES - VERTICAL	Maximum Spacing-Vertical / OUTSIDE – Adjacent to Structure					
(See Components Section for guide selection)						
Flue Diameter - Inches	4G	3G	2G	1G	PIC	PSW
6	8' 3" (2.5m)	9' 4" (2.7m)	10' 6" (3.2m)	17' (5.2m)	17' (5.2m)	17' (5.2m)
8	9' 7" (2.9m)	10' 9" (3.3m)	12' (3.7m)	17' 6' (5.3m)	17' 6' (5.3m)	17' 6' (5.3m)
10	10' 9" (3.3m)	12' (3.7m)	13' 3" (4.0m)	18' 6" (5.6m)	18' 6" (5.6m)	18' 6" (5.6m)
12	11' 11" (3.6m)	13' 2" (4.0m)	14' 6" (4.4m)	20' (6.1m)	20' (6.1m)	20' (6.1m)
14	13' 2" (4.0m)	14' 6" (4.4m)	15' 11" (4.8m)	21' (6.4m)	21' (6.4m)	21' (6.4m)
16	14' 2" (4.3m)	15' 7" (4.7m)	17' (5.2m)	22' (6.7m)	22' (6.7m)	22' (6.7m)
18	15' 4" (4.7m)	16' 9" (5.1m)	18' 3" (5.6m)	23' (7.0m)	23' (7.0m)	23' (7.0m)
20	16' 4" (5.0m)	17' 11" (5.5m)	19' 6" (5.9m)	24' (7.3m)	24' (7.3m)	24' (7.3m)
22	17' (5.2m)	18' 7" (5.7m)	20' 2" (6.2m)	24' 6" (7.5m)	24' 6" (7.5m)	24' 6" (7.5m)
24	17' 7" (5.4m)	19' 2" (5.8m)	20' 9" (6.3m)	25' (7.6m)	25' (7.6m)	25' (7.6m)
26	18' 2" (5.5m)	18' 2" (5.5m)	21' 5" (6.5m)	26' (7.9m)	26' (7.9m)	26' (7.9m)
28	18' 9" (5.7m)	18' 9" (5.7m)	22' 1" (6.9m)	27' (8.2m)	27' (8.2m)	27' (8.2m)
30	19' 4" (5.9m)	19' 4" (5.9m)	22' 8" (7.1m)	27' (8.2m)	27' (8.2m)	27' (8.2m)
32	19' 11" (6.0m)	19' 11" (6.0m)	23' 4" (7.3m)	28' 6" (8.7m)	28' 6" (8.7m)	28' 6" (8.7m)
34	20' 6" (6.2m)	20' 6" (6.2m)	24' (7.5m)	29' (8.9m)	29' (8.9m)	29' (8.9m)
36	21' (6.4m)	21' (6.4m)	24' 7" (7.5m)	30' (9.1m)	30' (9.1m)	30' (9.1m)
38	21' (6.4m)	N/A	24' 7" (7.5m)	30' 6" (9.3m)	30' 6" (9.3m)	30' 6" (9.3m)
40	21' (6.4m)	N/A	24' 7" (7.5m)	31' (9.4m)	31' (9.4m)	31' (9.4m)
42	21' (6.4m)	N/A	24' 7" (7.5m)	32' (9.8m)	32' (9.8m)	32' (9.8m)
44	21' (6.4m)	N/A	24' 7" (7.5m)	32' 6" (9.9m)	32' 6" (9.9m)	32' 6" (9.9m)
46	21' (6.4m)	N/A	24' 7" (7.5m)	33' 6" (10.2m)	33' 6" (10.2m)	33' 6" (10.2m)
48	21' (6.4m)	N/A	24' 7" (7.5m)	34' 6" (10.5m)	34' 6" (10.5m)	34' 6" (10.5m)

GUIDES - VERTICAL	Max. Vertical Spacing-VERTICAL / INTERNAL Below Roofline					
(See Components Section for guide selection)						
PRODUCT	4G*	3G	2G	1G	PIC	PSW
All Diameters – Full Angle Ring	18' (5.5m)	18' (5.5m)	19' (5.7m)	21' (6.4m)	25' (7.6m)	25' (7.6m)

*Per ICBO-ES Report ER5301/ICC-ESESR-2627, spacing is reduced to 13' for 3G/4G.

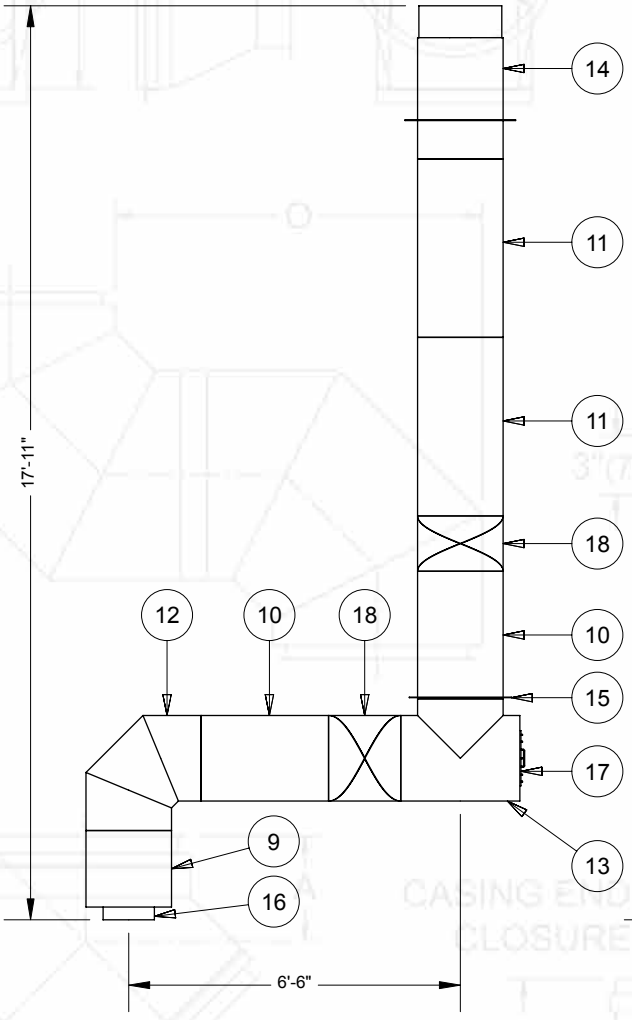
METAL-FAB GENERATED CAD

SUGGESTED BRACING FOR PLATE SUPPORT BY OTHERS.

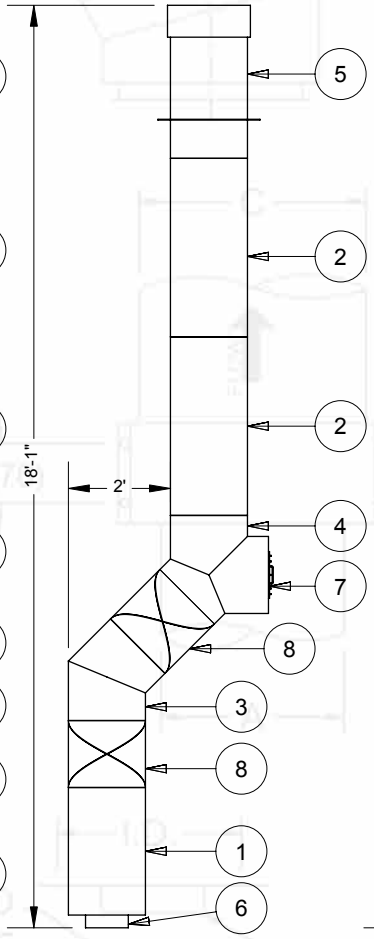


"X" IS A MIN. OF 30 DEG. WHEN BRACING IS USED. A WELDED FRAME MUST BE ADEQUATELY ATTACHED TO STRUCTURAL MEMBER FOR FRAMEWORK RIGIDITY, IF BRACING ISN'T USED.

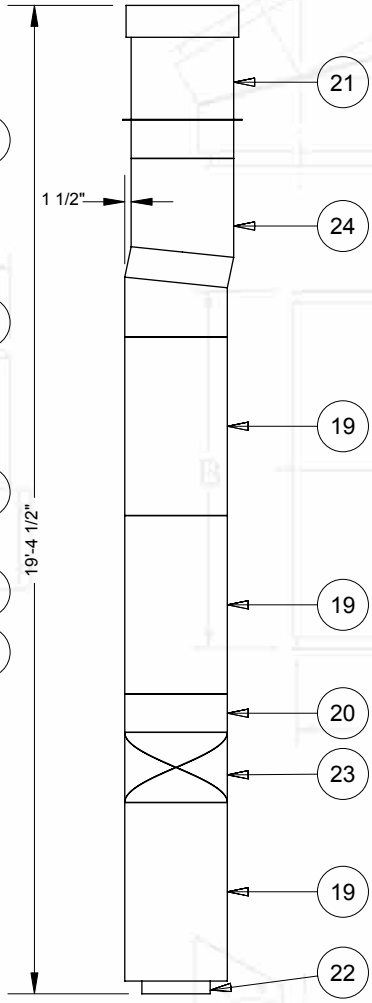
DIAMETER OF PIPE	PIC PS PLATE THICKNESS	BRACING FOR PIC PLATE SUPPORT HEIGHT OF STACK. 50'	100'
6" - 20"	3/16"	1 1/4" X 1 1/4" X 1/8"	2" X 2" X 1/4"
22" - 36"	1/4"	2" X 2" X 1/8"	3" X 3" X 1/4"
38" - 48"	1/4"	3" CHANNEL (3" X 1 1/2" X 1/4")	
DIAMETER OF PIPE	PIC PS PLATE THICKNESS	FRAMEWORK FOR PIC PLATE SUPPORT HEIGHT OF STACK. 50'	100'
6" - 20"	3/16"	1 3/4" X 1 3/4" X 1/8"	3" X 2" X 3/16"
22" - 36"	1/4"	2" X 2" X 1/4"	4" X 3" X 1/4"
38" - 48"	1/4"	3" CHANNEL (3" X 1 1/2" X 1/4")	



EH-1



EH-3

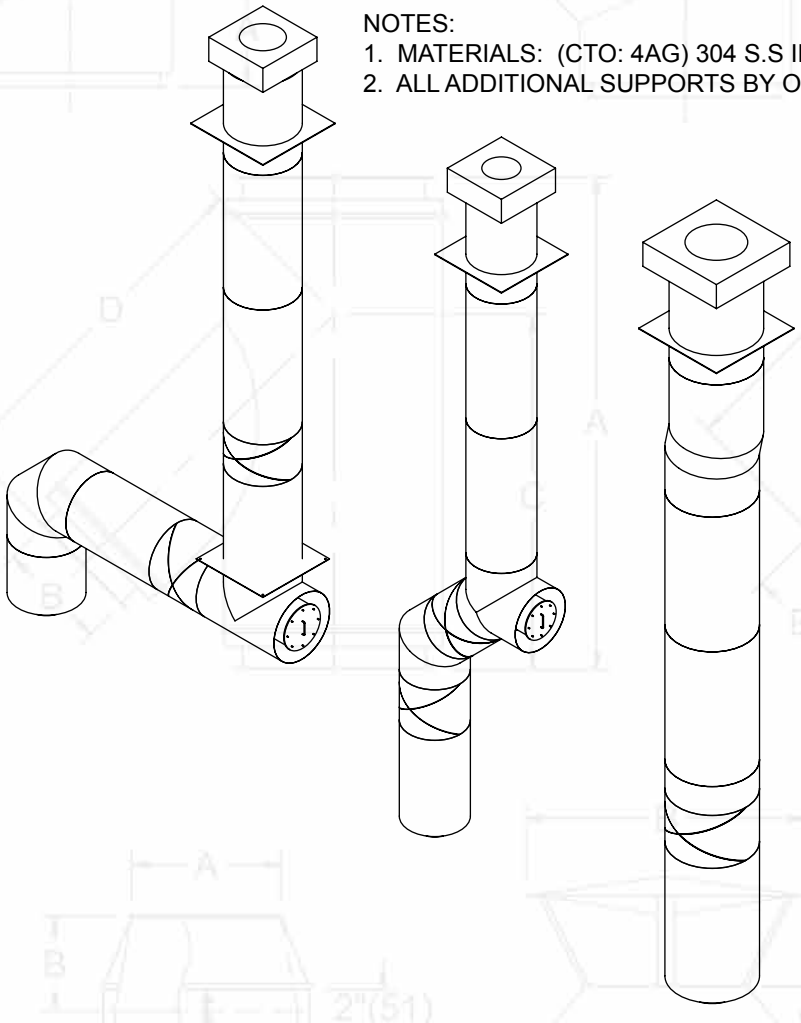


EH-4

INCLUDES BILL OF MATERIALS AND ISOMETRIC ILLUS.

Parts List				
ITEM #	QTY	PART NUMBER	CTO	DESCRIPTION
1	1	10PIC30-4	4AG	PIPE LENGTH
2	2	10PIC42-4	4AG	PIPE LENGTH
3	1	10PIC45L-4	4AG	45 DEG ELBOW
4	1	10PIC90Y-4	4AG	90 DEG WYE
5	1	10PICFCT195	4AG	FAN CURB TERMINATION
6	1	10PICRHCK-4	4AG	ROUND HOOD COLLAR KIT
7	1	10PICTAP-4	4AG	TOOLESS ACCESS PANEL
8	2	10PICVL-4	4AG	VARIABLE LENGTH
9	1	12PIC18-4	4AG	PIPE LENGTH
10	2	12PIC30-4	4AG	PIPE LENGTH
11	2	12PIC42-4	4AG	PIPE LENGTH
12	1	12PIC90L-4	4AG	90 DEG ELBOW
13	1	12PIC90MT-4	4AG	90 DEG MANIFOLD TEE
14	1	12PICFCT195	4AG	FAN CURB TERMINATION
15	1	12PICPS-4	4AG	PLATE SUPPORT
16	1	12PICRHCK-4	4AG	ROUND HOOD COLLAR KIT
17	1	12PICTAP-4	4AG	TOOLESS ACCESS PANEL
18	2	12PICVL-4	4AG	VARIABLE LENGTH
19	3	16PIC42-4	4AG	PIPE LENGTH
20	1	16PIC9-4	4AG	PIPE LENGTH
21	1	16PICFCT265	4AG	FAN CURB TERMINATION
22	1	16PICRHCK-4	4AG	ROUND HOOD COLLAR KIT
23	1	16PICVL-4	4AG	VARIABLE LENGTH
24	1	16PICVOK-4	4AG	VARIABLE OFFSET KIT
	7	P080		GREASE DUCT SEALANT

NOTES:
1. MATERIALS: (CTO: 4AG) 304 S.S INNER/ ALUMINIZED OUTER/ 4" INSULATION.
2. ALL ADDITIONAL SUPPORTS BY OTHERS.



BASED ON INFORMATION PROVIDED, METAL-FAB INC. HAS CREATED THIS DRAWING FOR YOUR REVIEW.

THIS DRAWING IS PROVIDED FOR YOUR CONVENIENCE. METAL-FAB INC. ASSUMES NO LIABILITY FOR ACCURACY WITHOUT YOUR APPROVAL.

YOUR REVIEW AND APPROVAL ASSURES THAT THE INFORMATION PROVIDED IS CORRECT AND THAT ALL MATERIAL DETAILED ON THE BILL-OF-MATERIALS REPRESENT ALL COMPONENTS REQUIRED TO COMPLETE THE INSTALLATION.

APPROVED:

SPECIFYING ENGINEER _____

INSTALLING CONTRACTOR _____

METAL-FAB INC. REP. _____

DATE _____

THE SUBMITTAL DRAWING HAS BEEN PREPARED AT THE REQUEST OF A METAL-FAB REPRESENTATIVE, IT IS THE RESPONSIBILITY OF THE SPECIFING ENGINEER OR END USER TO ASSURE COMPLIANCE WITH LOCAL CODES.

JOB: GREASE DUCT			
DATE: 11/13/2008	SHEET SIZE: B	DRAWN BY: BUTCHA	DRAWING NUMBER: S7977P145
REVISION:		METAL-FAB INC.	
SHEET:			

WEIGHT/LIFT INFORMATION

The average weight of the chimney, per foot of length, can be calculated using the following formula:

Weight (lbs. per lineal foot) = (Pipe Dia. in inches) x “weight factor”

Weight Factor

PSW = 0.40	2G = 1.05
PIC = 0.80	3G = 1.45
1G = 0.95	4G = 1.45

Example: 8"1G Weight calculated: 8 x 0.95 = 7.6 lbs. per lineal foot.

STACK LIFT CHART

This chart indicates maximum height that can be suspended from overhead.

	PSW	PIC	1G	2G	3G	4G
PIPE DIA.	Height	Height	Height	Height	Height	Height
6" (152mm)	**220'** (67m)	**110'** (34m)	**90'** (27m)	**80'** (24m)	**60'** (18m)	**60'** (18m)
8" (203mm)	**190'** (59m)	**90'** (27m)	**80'** (24m)	**70'** (21m)	**50'** (15m)	**50'** (15m)
10" (254mm)	**170'** (52m)	**80'** (24m)	**70'** (21m)	**60'** (18m)	**40'** (12m)	**40'** (12m)
12" (305mm)	**150'** (46m)	**80'** (24m)	**70'** (21m)	**60'** (18m)	**40'** (12m)	**40'** (12m)
14" (356mm)	**140'** (43m)	**70'** (21m)	**60'** (18m)	**50'** (15m)	**40'** (12m)	**40'** (12m)
16" (406mm)	**130'** (40m)	**70'** (21m)	**60'** (18m)	**50'** (15m)	**40'** (12m)	**40'** (12m)
18" (457mm)	**120'** (37m)	**60'** (18m)	**50'** (15m)	**50'** (15m)	**40'** (12m)	**40'** (12m)
20" (508mm)	**110'** (34m)	**60'** (18m)	**50'** (15m)	**40'** (12m)	**30'** (9m)	**30'** (9m)
22" (559mm)	**110'** (34m)	**50'** (15m)	**40'** (12m)	**40'** (12m)	**30'** (9m)	**30'** (9m)
24" (610mm)	**100'** (30m)	**50'** (15m)	**40'** (12m)	**40'** (12m)	**30'** (9m)	**30'** (9m)
26" (660mm)	**90'** (27m)	**50'** (15m)	**40'** (12m)	**40'** (12m)	**30'** (9m)	**30'** (9m)
28" (711mm)	**90'** (27m)	**40'** (12m)	**40'** (12m)	**30'** (9m)	**20'** (6m)	**20'** (6m)
30" (762mm)	**80'** (24m)	**40'** (12m)	**40'** (12m)	**30'** (9m)	**20'** (6m)	**20'** (6m)
32" (813mm)	**80'** (24m)	**40'** (12m)	**30'** (9m)	**30'** (9m)	**20'** (6m)	**20'** (6m)
34" (864mm)	**70'** (21m)	**40'** (12m)	**30'** (9m)	**20'** (6m)	**20'** (6m)	**20'** (6m)
36" (914mm)	**70'** (21m)	**30'** (9m)	**30'** (9m)	**20'** (6m)	**15'** (4.5m)	**15'** (4.5m)
38" (965mm)	**60'** (18m)	**30'** (9m)	**20'** (6m)	**20'** (6m)	**N/A**	**15'** (4.5m)
40" (1016mm)	**60'** (18m)	**30'** (9m)	**20'** (6m)	**20'** (6m)	**N/A**	**15'** (4.5m)
42" (1067mm)	**60'** (18m)	**30'** (9m)	**20'** (6m)	**20'** (6m)	**N/A**	**15'** (4.5m)
44" (1118mm)	**60'** (18m)	**30'** (9m)	**20'** (6m)	**20'** (6m)	**N/A**	**15'** (4.5m)
46" (1168mm)	**50'** (15m)	**20'** (6m)	**20'** (6m)	**20'** (6m)	**N/A**	**10'** (3m)
48" (1219mm)	**50'** (15m)	**20'** (6m)	**20'** (6m)	**20'** (6m)	**N/A**	**10'** (3m)

COMPONENTS

Components are identified by Part number and CTO (Configured To Order) code. The part number identifies the flue diameter and the component. EXAMPLE: 24PIC30L = 24 diameter-30 degree Elbow. The CTO code indicates materials and insulation thickness. EXAMPLE: 4A2 = 304 Stainless Steel Flue, Aluminized Steel Casing, and 2 inches of ceramic insulation. See the table below for CTO options.

CTO CODES		
First Position	Second Position	Third Position
(Flue Material)	(Casing Material)	(Insulation)
3 = 430 S/S	A = ALUMINIZED STEEL	0 = 1" AIRSPACE
4 = 304 S/S	4 = 304 S/S	1 = 1" CERAMIC
6 = 316 S/S	6 = 316 S/S	2 = 2" CERAMIC
	3 = 430 S/S	3 = 3" CERAMIC
		4 = 4" CERAMIC

ROUND HOOD COLLAR (RHC)

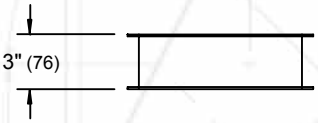
Available in 8" to 18" dia. (Other diameters are custom.)

Height: 3"

NOTE: Can be field welded to Hood or supplied to Hood manufacturer for installation.

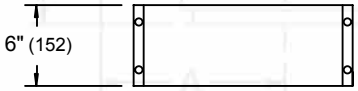
NOTE: Confirm dimensions with Hood manufacturer.

NOTE: Requires Round Hood Connection Kit to complete installation.



ROUND HOOD CONNECTION KIT (RHCK)

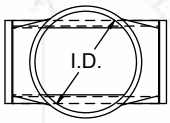
NOTE: Required for Round Hood Collar (RHC). Enclose Round Hood Collar and connect first pipe section to collar.



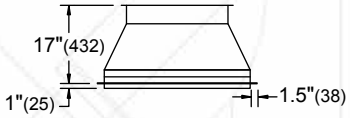
SQUARE TO ROUND (STR)

NOTE: Specify dimensional data at order entry.

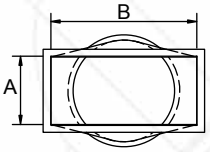
U.L. listed.



TOP VIEW



FRONT VIEW

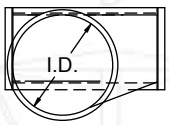


BOTTOM VIEW

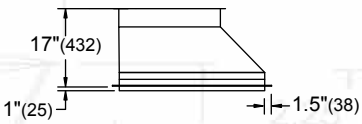
ECCENTRIC SQUARE TO ROUND (ESTR) (CUSTOM PART)

NOTE: Specify dimensional data at order entry.

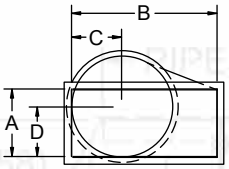
U.L. listed.



TOP VIEW



FRONT VIEW



BOTTOM VIEW

COMPONENTS

PIPE LENGTHS

9" (229)
18" (458)
30" (762)
42" (1067)

Flow Resistance K=.4 ($\frac{L}{D}$) for 6"(152) - 16"(606) diameters

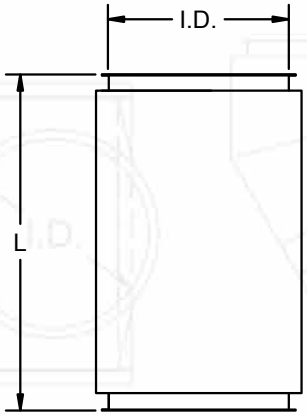
Flow Resistance K=.3 ($\frac{L}{D}$) for 18"(458) - 48"(1219) diameters

Flow Resistance K=.25 ($\frac{L}{D}$) for Engine and turbine exhausts,

L = pipe length in feet

D = pipe diameter in inches

NOTE: Custom lengths available, contact factory.
3G only available through 24" I.D.



PIPE I.D.	PIPE O.D.			
PSW	1G	2G	3G	4G
6" (153)	**8"** (204)	**10"** (254)	**12"** (305)	**14"** (356)
8" (204)	**10"** (254)	**12"** (305)	**14"** (356)	**16"** (407)
10" (254)	**12"** (305)	**14"** (356)	**16"** (407)	**18"** (458)
12" (305)	**14"** (356)	**16"** (407)	**18"** (458)	**20"** (508)
14" (356)	**16"** (407)	**18"** (458)	**20"** (508)	**22"** (559)
16" (407)	**18"** (458)	**20"** (508)	**22"** (559)	**24"** (610)
18" (458)	**20"** (508)	**22"** (559)	**24"** (610)	**26"** (661)
20" (508)	**22"** (559)	**24"** (610)	**26"** (661)	**28"** (712)
22" (559)	**24"** (610)	**26"** (661)	**28"** (712)	**30"** (762)
24" (610)	**26"** (661)	**28"** (712)	**30"** (762)	**32"** (813)
26" (661)	**28"** (712)	**30"** (762)	**32"** (813)	**34"** (864)
28" (712)	**30"** (762)	**32"** (813)	**34"** (864)	**36"** (915)
30" (762)	**32"** (813)	**34"** (864)	**36"** (915)	**38"** (966)
32" (813)	**34"** (864)	**36"** (915)	**38"** (966)	**40"** (1016)
34" (864)	**36"** (915)	**38"** (966)	**40"** (1016)	**42"** (1067)
36" (915)	**38"** (966)	**40"** (1016)	**42"** (1067)	**44"** (1118)
38" (966)	**40"** (1016)	**42"** (1067)	**N/A**	**46"** (1169)
40" (1016)	**42"** (1067)	**44"** (1118)	**N/A**	**48"** (1220)
42" (1067)	**44"** (1118)	**46"** (1169)	**N/A**	**50"** (1270)
44" (1118)	**46"** (1169)	**48"** (1220)	**N/A**	**52"** (1321)
46" (1169)	**48"** (1220)	**50"** (1270)	**N/A**	**54"** (1372)
48" (1220)	**50"** (1270)	**52"** (1321)	**N/A**	**56"** (1423)

ADJUSTABLE LENGTH EXPANSION JOINT (AL)

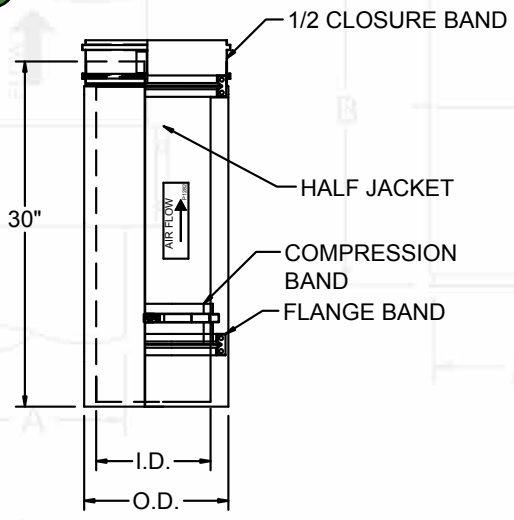
Flow Resistance K = .4($\frac{L}{D}$)

NOTE: This part can be field adjusted to fill gaps between standard length components or to compensate for thermal expansion and contraction between two fixed points.

INSTALLED LENGTH

Minimum: **5 1/2"** (140)
Maximum: **22"** (559)

NOTE: Do not install within 8' downstream of clean out location.



COMPONENTS

VARIABLE LENGTH (VL)

Flow Resistance K = $.4(\frac{L}{D})$

L = pipe length in feet

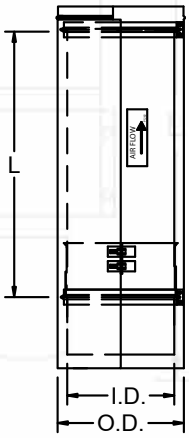
D = flue diameter

NOTE: Used to fill gaps between standard length components. Does not allow for expansion.

INSTALLED LENGTH

Minimum: **4"** (140)

Maximum: **26"** (559)

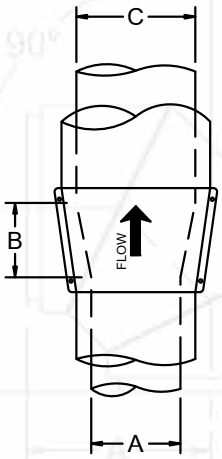


TAPERED INCREASER (TI)

Flow Resistance K = $.51\ \frac{[1-(\frac{A}{C})^2]^2}{(\frac{A}{C})^4}$

NOTE: For each 2" increase in diameter, the "B" length increases by 5". Minimum Length is 10". Tapered increasers are preferred over step increasers when space permits.

NOTE: When ordering, specify both diameters with small diameter first (ie. 18PICTI22 for 18" to 22")



ECCENTRIC TAPERED INCREASER (ETI)

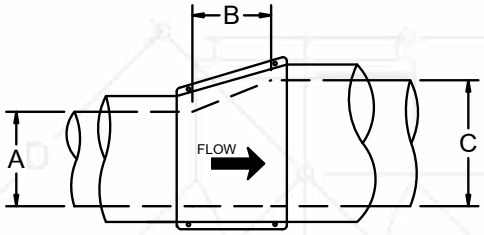
Flow Resistance K = $.51\ \frac{[1-(\frac{A}{C})^2]^2}{(\frac{A}{C})^4}$

NOTE: The number of steps is determined by the number of pipe sizes the tapered increaser enlarges.

Each step increases "B" dimension 5" (127).

Tapered increasers are preferred over step increasers when space permits.

NOTE: When ordering, specify both diameters with small diameter first (ie. 18PICETI22 for 18" to 22") For each 2" increase in diameter, the "B" Length increases by 5". Minimum Length is 10".



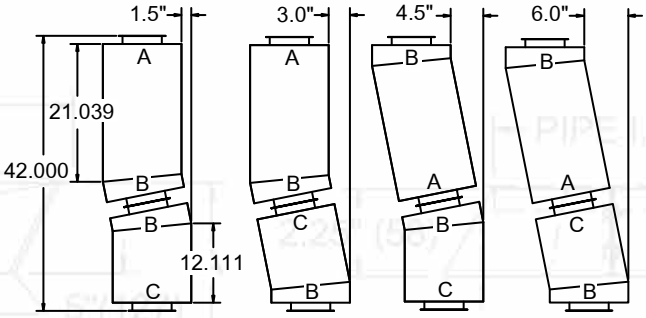
VARIABLE OFFSET KIT (VOK)

Flow Resistance K = 0.09

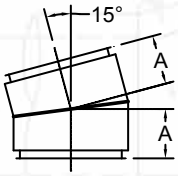
Assembled Length = 42"

ENDS JOINED	OFFSET
B-B	**1.5"**
B-C	**3.0"**
A-B	**4.5"**
A-C	**6.0"**

Provides offsets of 1.5", 3.0", 4.5", & 6" by rotating components.



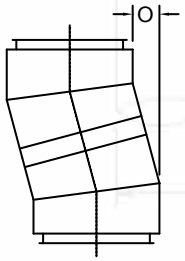
15° ELBOW (15L)



Flow Resistance K = 0.06

Offset Distance:
O= 2 x “A” x 0.259

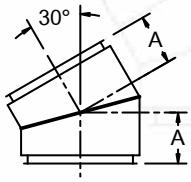
Offset distance between 2 elbows with a straight length between is:
O=(2 x “A” + pipe length) x 0.259



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (153)	**6.00** (153)	**6.00** (153)	**6.00** (153)	**6.00** (153)
8" (204)	**6.00** (153)	**6.00** (153)	**6.00** (153)	**7.75** (197)
10" (254)	**6.00** (153)	**6.00** (153)	**7.75** (197)	**7.75** (197)
12" (305)	**6.00** (153)	**7.75** (197)	**7.75** (197)	**7.75** (197)
14" (356)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)
16" (407)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)

PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (458)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)
20" (508)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)
22" (559)	**7.75** (197)	**7.75** (197)	**8.50** (216)	**8.50** (216)
24" (610)	**7.75** (197)	**8.50** (216)	**8.50** (216)	**8.50** (216)
26" (661)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
28" (712)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
30" (762)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
32" (813)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**11.00** (280)
34" (864)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**11.00** (280)
36" (915)	**8.50** (216)	**11.00** (280)	**11.00** (280)	**11.00** (280)
38" (966)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
40" (1016)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
42" (1067)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
44" (1118)	**11.00** (280)	**11.00** (280)	**N/A**	**12.75** (324)
46" (1169)	**11.00** (280)	**11.00** (280)	**N/A**	**12.75** (324)
48" (1220)	**11.00** (280)	**12.75** (324)	**N/A**	**12.75** (324)

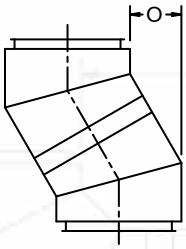
30° ELBOW (30L)



Flow Resistance K = 0.12

Offset Distance = “A”

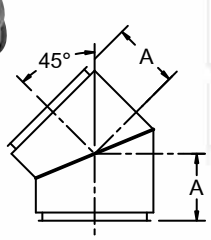
Offset distance between 2 elbows with a straight length between is:
O = (2 x A +pipe length) x 0.5



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (153)	**6.00** (153)	**6.00** (153)	**6.00** (153)	**6.00** (153)
8" (204)	**6.00** (153)	**6.00** (153)	**6.00** (153)	**7.75** (197)
10" (254)	**6.00** (153)	**6.00** (153)	**7.75** (197)	**7.75** (197)
12" (305)	**6.00** (153)	**7.75** (197)	**7.75** (197)	**7.75** (197)
14" (356)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)
16" (407)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)

PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (458)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**7.75** (197)
20" (508)	**7.75** (197)	**7.75** (197)	**7.75** (197)	**8.50** (216)
22" (559)	**7.75** (197)	**7.75** (197)	**8.50** (216)	**8.50** (216)
24" (610)	**7.75** (197)	**8.50** (216)	**8.50** (216)	**8.50** (216)
26" (661)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
28" (712)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
30" (762)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**8.50** (216)
32" (813)	**8.50** (216)	**8.50** (216)	**8.50** (216)	**11.00** (280)
34" (864)	**8.50** (216)	**8.50** (216)	**11.00** (280)	**11.00** (280)
36" (915)	**8.50** (216)	**11.00** (280)	**11.00** (280)	**11.00** (280)
38" (966)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
40" (1016)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
42" (1067)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
44" (1118)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
46" (1169)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)
48" (1220)	**11.00** (280)	**11.00** (280)	**N/A**	**11.00** (280)

45° ELBOW (45L)

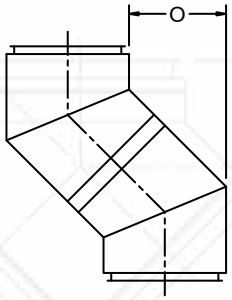


Flow Resistance K = 0.15

Offset Distance:

O = 2 x “A” x 0.707

Offset Distance with pipe length between elbows:
O = (2 x “A” + pipe length) x 0.707



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (153)	**7.00** (178)	**7.00** (178)	**7.00** (178)	**7.00** (178)
8" (204)	**7.00** (178)	**7.00** (178)	**7.00** (178)	**10.00** (254)
10" (254)	**7.00** (178)	**7.00** (178)	**10.00** (254)	**10.25** (261)
12" (305)	**7.00** (178)	**10.00** (254)	**10.25** (261)	**10.25** (261)
14" (356)	**10.00** (254)	**10.25** (261)	**10.25** (261)	**10.25** (261)
16" (407)	**10.25** (261)	**10.25** (261)	**10.25** (261)	**10.25** (261)

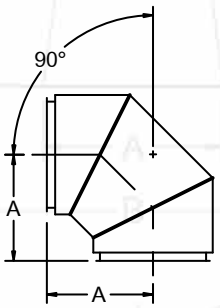
PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (458)	**10.25** (261)	**10.25** (261)	**10.25** (261)	**10.25** (261)
20" (508)	**10.25** (261)	**10.25** (261)	**10.25** (261)	**11.75** (299)
22" (559)	**10.25** (261)	**10.25** (261)	**11.75** (299)	**11.75** (299)
24" (610)	**10.25** (261)	**11.75** (299)	**11.75** (299)	**11.75** (299)
26" (661)	**11.75** (299)	**11.75** (299)	**11.75** (299)	**11.75** (299)
28" (712)	**11.75** (299)	**11.75** (299)	**11.75** (299)	**11.75** (299)
30" (762)	**11.75** (299)	**11.75** (299)	**11.75** (299)	**11.75** (299)
32" (813)	**11.75** (299)	**11.75** (299)	**11.75** (299)	**14.00** (356)
34" (864)	**11.75** (299)	**11.75** (299)	**11.75** (299)	**14.00** (356)
36" (915)	**11.75** (299)	**14.00** (356)	**11.75** (299)	**14.00** (356)
38" (966)	**14.00** (356)	**14.00** (356)	**N/A**	**14.00** (356)
40" (1016)	**14.00** (356)	**14.00** (356)	**N/A**	**14.00** (356)
42" (1067)	**14.00** (356)	**14.00** (356)	**N/A**	**14.00** (356)
44" (1118)	**14.00** (356)	**14.00** (356)	**N/A**	**15.25** (387)
46" (1169)	**14.00** (356)	**14.00** (356)	**N/A**	**15.25** (387)
48" (1220)	**14.00** (356)	**15.25** (387)	**N/A**	**15.25** (387)

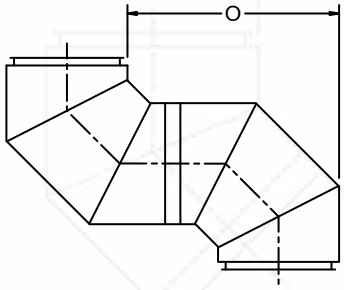
90° ELBOW (90L)

Flow Resistance K:
6" - 8" = 0.38
10" - 18" = 0.42
20" - 26" = 0.54
28" - 36" = 0.72
38" - 48" = 0.72

Offset Distance:
O = 2 x "A"

Offset Distance with pipe length between elbows:
O = 2 x "A"+pipe length

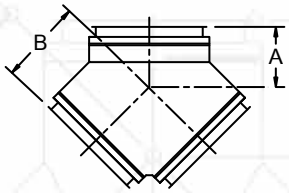




PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (153)	**11"** (280)	**12"** (305)	**13"** (331)	**14"** (356)
8" (204)	**12"** (305)	**13"** (331)	**14"** (356)	**15"** (381)
10" (254)	**13"** (331)	**14"** (356)	**15"** (381)	**16"** (407)
12" (305)	**14"** (356)	**15"** (381)	**16"** (407)	**17"** (432)
14" (356)	**15"** (381)	**16"** (407)	**17"** (432)	**18"** (458)
16" (407)	**16"** (407)	**17"** (432)	**18"** (458)	**19"** (483)
18" (458)	**17"** (432)	**18"** (458)	**19"** (483)	**20"** (508)
20" (508)	**18"** (458)	**19"** (483)	**20"** (508)	**21"** (534)
22" (559)	**19"** (483)	**20"** (508)	**21"** (534)	**22"** (559)
24" (610)	**20"** (508)	**21"** (534)	**22"** (559)	**23"** (585)
26" (661)	**21"** (534)	**22"** (559)	**23"** (585)	**24"** (610)
28" (712)	**22"** (559)	**23"** (585)	**24"** (610)	**25"** (635)
30" (762)	**23"** (585)	**24"** (610)	**25"** (635)	**26"** (661)
32" (813)	**24"** (610)	**25"** (635)	**26"** (661)	**27"** (686)
34" (864)	**25"** (635)	**26"** (661)	**27"** (686)	**28"** (712)
36" (915)	**26"** (661)	**27"** (686)	**28"** (712)	**29"** (737)
38" (966)	**27"** (686)	**28"** (712)	**N/A**	**30"** (762)
40" (1016)	**28"** (712)	**29"** (737)	**N/A**	**31"** (788)
42" (1067)	**29"** (737)	**30"** (762)	**N/A**	**32"** (813)
44" (1118)	**30"** (762)	**31"** (788)	**N/A**	**33"** (838)
46" (1169)	**31"** (788)	**32"** (813)	**N/A**	**34"** (864)
48" (1220)	**32"** (813)	**33"** (838)	**N/A**	**35"** (889)

90° WYE (90Y)

Flow Resistance K = 0.6
NOTE: Available in 6" - 36" diameters only.



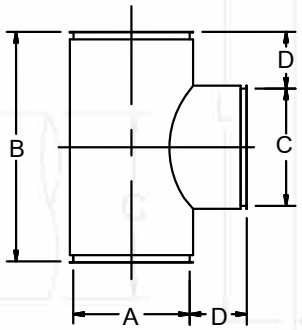
PIPE I.D.	PSW / PIC / 1G		2G		3G		4G	
	A	B	A	B	A	B	A	B
6" (153)	**5.12** (131)	**9"** (229)	**5.62** (143)	**10"** (254)	**6.00** (153)	**11"** (280)	**6.50** (166)	**12"** (305)
8" (204)	**5.62** (143)	**10"** (254)	**6.00** (153)	**11"** (280)	**6.50** (166)	**12"** (305)	**7.00** (178)	**13"** (331)
10" (254)	**6.00** (153)	**11"** (280)	**6.50** (166)	**12"** (305)	**7.00** (178)	**13"** (331)	**7.25** (185)	**14"** (356)
12" (305)	**6.50** (166)	**12"** (305)	**7.00** (178)	**13"** (331)	**7.25** (185)	**14"** (356)	**7.75** (197)	**15"** (381)
14" (356)	**7.00** (178)	**13"** (331)	**7.25** (185)	**14"** (356)	**7.75** (197)	**15"** (381)	**8.12** (207)	**16"** (407)
16" (407)	**7.25** (185)	**14"** (356)	**7.75** (197)	**15"** (381)	**8.12** (207)	**16"** (407)	**8.50** (216)	**17"** (432)
18" (458)	**7.75** (197)	**15"** (381)	**8.12** (207)	**16"** (407)	**8.50** (216)	**17"** (432)	**9.00** (229)	**18"** (458)
20" (508)	**8.12** (207)	**16"** (407)	**8.50** (216)	**17"** (432)	**9.00** (229)	**18"** (458)	**9.37** (238)	**19"** (483)
22" (559)	**8.50** (216)	**17"** (432)	**9.00** (229)	**18"** (458)	**9.37** (238)	**19"** (483)	**9.75** (248)	**20"** (508)
24" (610)	**9.00** (229)	**18"** (458)	**9.37** (238)	**19"** (483)	**9.75** (248)	**20"** (508)	**10.25** (261)	**21"** (534)
26" (661)	**9.37** (238)	**19"** (483)	**9.75** (248)	**20"** (508)	**10.25** (261)	**21"** (534)	**10.62** (270)	**22"** (559)
28" (712)	**9.75** (248)	**20"** (508)	**10.25** (261)	**21"** (534)	**10.62** (270)	**22"** (559)	**11.12** (283)	**23"** (585)
30" (762)	**10.25** (261)	**21"** (534)	**10.62** (270)	**22"** (559)	**11.12** (283)	**23"** (585)	**11.50** (292)	**24"** (610)
32" (813)	**10.62** (270)	**22"** (559)	**11.12** (283)	**23"** (585)	**11.50** (292)	**24"** (610)	**11.87** (302)	**25"** (635)
34" (864)	**11.12** (283)	**23"** (585)	**11.50** (292)	**24"** (610)	**11.87** (302)	**25"** (635)	**12.25** (311)	**26"** (661)
36" (915)	**11.50** (292)	**24"** (610)	**11.87** (302)	**25"** (635)	**12.25** (311)	**26"** (661)	**12.62** (321)	**27"** (686)

90° MANIFOLD TEE (90MT)

Flow Resistance K = 1.25

A = Pipe I.D.
B = "C" I.D. + (2 x "D")
C = Tap I.D.
D = PSW/PIC/IPIC-1 = 5"
IPIC-2 = 6"
IPIC-3 = 7"
IPIC-4 = 8"

NOTE: Specify tap diameter (C) at time of order.

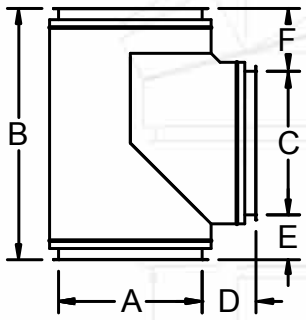


BOOT TEE (BT)

Flow Resistance K = 0.65

A = Pipe I.D.
B = "C" + 10" +(2 x insulation thickness)
C = Tap I.D.
D, E, F = PSW/PIC/IPIC-1 = 6", 5" & 7"
IPIC-2 = 7", 6" & 8"
IPIC-3 = 8", 7" & 9"
IPIC-4 = 9", 8" & 10"

NOTE: Specify tap diameter (C) at time of order.

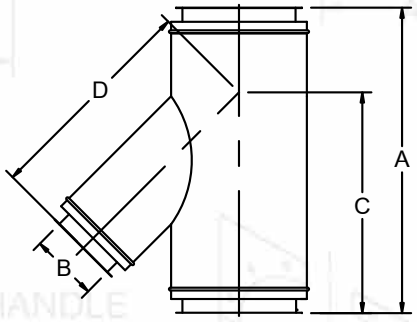


45° MANIFOLD TEE (45MT)

Available through 48" dia.
Flow Resistance K = 0.4

NOTE: Used for low resistance flow into vertical or horizontal run. Specify Tap Diameter "B" when ordering.

NOTE: For dimensional information see tables on pages 29-35.



COMPONENTS

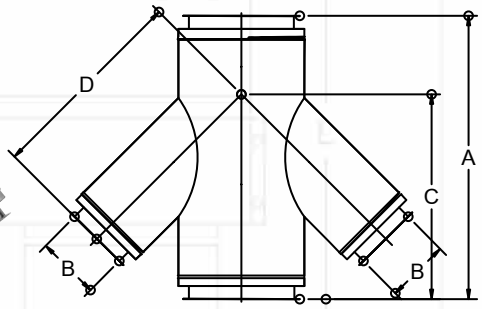
DOUBLE LATERAL (DL)

Available in 8" to 48" dia.
Flow Resistance K = 0.4

NOTE: Used to centrally connect two appliance manifolds to a common chimney. Specify tap diameter "B" at time of order.

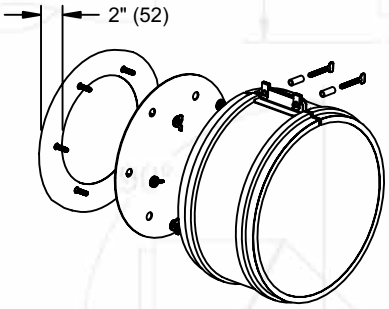
NOTE: Tap dia. must be less than Body dia.

NOTE: For dimensional information see tables on pages 29-35.



TOOLESS ACCESS PANEL (TAP)

Provides tooless access for inspection and cleaning. Opening is 3" less than flue diameter.



SIDEWALL TOOLESS ACCESS PANEL (STAP)

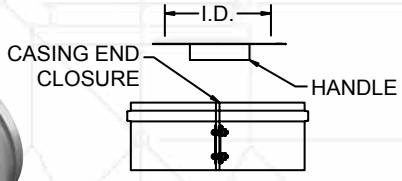
Used to facilitate inspections and cleaning. Can be installed in horizontal or vertical runs. When installed in horizontal runs the opening must be above the centerline of the duct.

Duct Diameters	Opening Dimension	Minimum Pipe Length
10" - 14"	8" X 4"	18"
16" - 20"	12" X 8"	22"
22" - 36"	16" X 12"	26"

NOTE: Can be installed in any pipe length exceeding minimum.

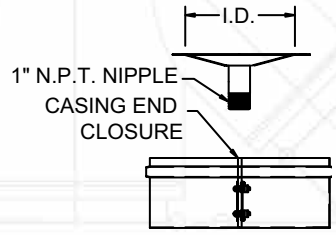
TEE CAP LESS DRAIN W/ CASING END CLOSURE (TCN)

NOTE: Used to close and seal unused port of Tees, Wyes and Laterals.



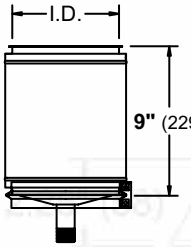
DRAIN TEE CAP W/CASING END CLOSURE (TC)

NOTE: Provides drain port for rain or condensation.



DRAIN BUCKET (DB)

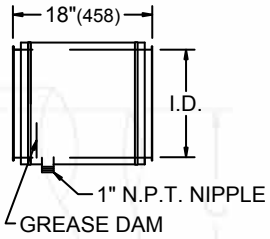
NOTE: Used at the base or a vertical riser as a drain reservoir and to provide cleanout access.



COMPONENTS

DUCT DRAIN (DR)

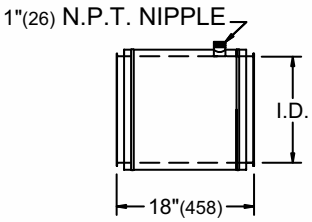
NOTE: Used as a point drain for horizontal runs.



NOZZLE SECTION (NS)

NOTE: Used to insert a fire suppression or wash down nozzle or as a drain point in a horizontal run.

NOTE: Specify dimensional data at order entry.



SPRINKLER HEAD ACCESS PORT (9SHAP)

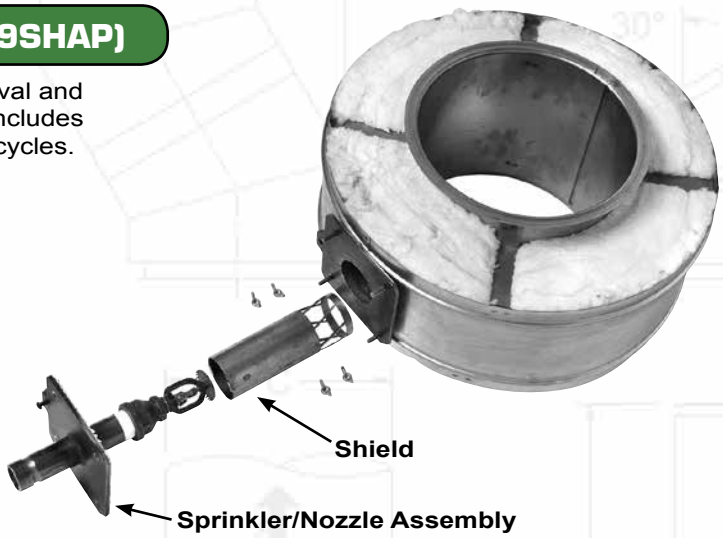
NOTE: Tooless access for the installation, removal and inspection of sprinkler or wash down nozzles. Includes shield to protect sprinkler head during cleaning cycles.

Sprinkler Head not included.

Not UL Listed.

Duct Length: 9"

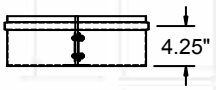
Available in 3A3, 4A3, 4A4 ONLY!



CASING END CLOSURE (CEC)

NOTE: Used as an end cover when transitioning from one insulation thickness to PSW. When ordering, specify PICCEC

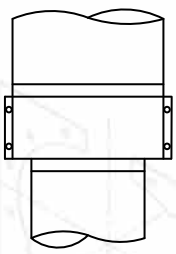
IPICCEC-1
-2
-3
-4



TRANSITION BAND (TB)

NOTE: Used as a joint closure when transitioning from one insulation thickness to another. When ordering, specify

IPICTB-1-2 -2-3
-1-3 -2-4
-1-4 -3-4



COMPONENTS

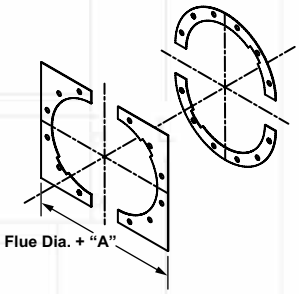
PLATE SUPPORT (PS)

Provides vertical or horizontal rigid support.

Includes split plates, clamp flanges, and 1/2 closure bands. (Zinc plated)

NOTE: Does not allow for thermal expansion.

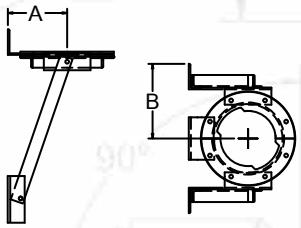
PSW/PIC/IPIC-1	A=6"
IPIC-2	A=8"
IPIC-3	A=10"
IPIC-4	A=12"



WALL SUPPORT ASSEMBLY (WSA)

Used to provide vertical or horizontal rigid support point. (Zinc plated)

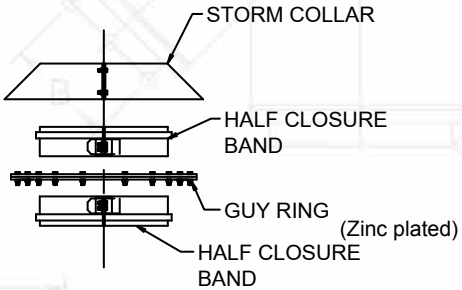
NOTE: Does not allow for thermal expansion.



PIPE I.D.	PSW / PIC / 1G		2G		3G		4G	
	A	B	A	B	A	B	A	B
6" (153)	**7.87** (200)	**7.25** (185)	**8.87** (226)	**8.12** (207)	**11.12** (283)	**10.50** (267)	**11.12** (283)	**10.50** (267)
8" (204)	**8.87** (226)	**8.12** (207)	**10.12** (2.58)	**9.50** (242)	**12.37** (315)	**11.75** (299)	**12.37** (315)	**11.75** (299)
10" (254)	**10.12** (2.58)	**9.50** (242)	**11.12** (283)	**10.50** (267)	**13.37** (340)	**12.75** (324)	**13.37** (340)	**12.75** (324)
12" (305)	**11.12** (283)	**10.50** (267)	**12.37** (315)	**11.75** (299)	**14.37** (366)	**13.75** (350)	**14.37** (366)	**13.75** (350)
14" (356)	**12.37** (315)	**11.75** (299)	**13.37** (340)	**12.75** (324)	**15.37** (391)	**14.75** (375)	**15.37** (391)	**14.75** (375)
16" (407)	**13.37** (340)	**12.75** (324)	**14.37** (366)	**13.75** (350)	**16.37** (416)	**15.75** (400)	**16.37** (416)	**15.75** (400)
18" (458)	**14.37** (366)	**13.75** (350)	**15.37** (391)	**14.75** (375)	**17.62** (448)	**17.00** (432)	**17.62** (448)	**17.00** (432)
20" (508)	**15.37** (391)	**14.75** (375)	**16.37** (416)	**15.75** (400)	**18.62** (473)	**18.00** (458)	**18.62** (473)	**18.00** (458)
22" (559)	**16.37** (416)	**15.75** (400)	**17.62** (448)	**17.00** (432)	**19.62** (499)	**19.00** (483)	**19.62** (499)	**19.00** (483)
24" (610)	**17.62** (448)	**17.00** (432)	**18.62** (473)	**18.00** (458)	**20.62** (524)	**20.00** (508)	**20.62** (524)	**20.00** (508)
26" (661)	**18.62** (473)	**18.00** (458)	**19.62** (499)	**19.00** (483)	**21.62** (550)	**21.00** (534)	**21.62** (550)	**21.00** (534)
28" (712)	**19.62** (499)	**19.00** (483)	**20.62** (524)	**20.00** (508)	**23.12** (588)	**22.50** (572)	**23.12** (588)	**22.50** (572)
30" (762)	**20.62** (524)	**20.00** (508)	**21.62** (550)	**21.00** (534)	**24.12** (613)	**23.50** (597)	**24.12** (613)	**23.50** (597)
32" (813)	**21.62** (550)	**21.00** (534)	**23.12** (588)	**22.50** (572)	**25.12** (639)	**24.50** (623)	**25.12** (639)	**24.50** (623)
34" (864)	**23.12** (588)	**22.50** (572)	**24.12** (613)	**23.50** (597)	**26.12** (664)	**25.50** (648)	**26.12** (664)	**25.50** (648)
36" (915)	**24.12** (613)	**23.50** (597)	**25.12** (639)	**24.50** (623)	**27.12** (689)	**26.50** (574)	**27.12** (689)	**26.50** (574)

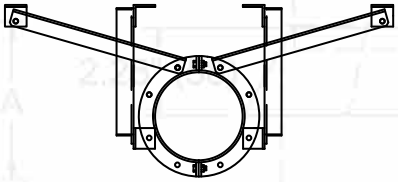
GUY RING (GR)

NOTE: Guy Ring is installed at the flange to flange joint of two sections of pipe. Storm Collar and Half Closure Bands are included. See installation instructions for correct location.



WALL GUIDE (WG)

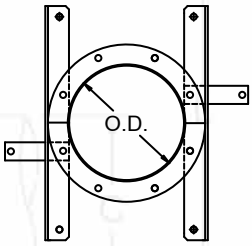
NOTE: Used to provide lateral guidance and allow for thermal expansion. (Zinc plated)



COMPONENTS

FLOOR GUIDE (FG)

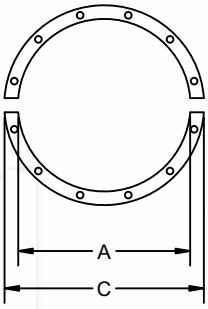
NOTE: Used at each floor to insure correct alignment through floor opening. (Zinc plated)



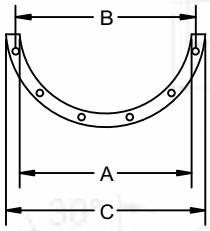
FULL ANGLE RING (FAR)

Provides lateral support for vertical runs.
Allows pipe movement for thermal expansion.
(Zinc plated)

FULL ANGLE RING



HALF ANGLE RING



HALF ANGLE RING (HAR)

Used to support horizontal runs.
(Zinc plated)

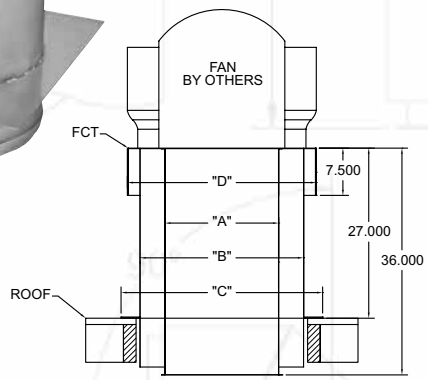
PRODUCT					DIMENSIONS			
PIPE I.D.					Inside	Hole Centerline	Outside	Hole Qty.
PSW	PIC / 1G	2G	3G	4G	A	B	C	D
6" (153)	**-**	-	-	-	**6.12** (156)	**7.50** (191)	**8.62** (220)	6
8" (204)	**6"** (153)	-	-	-	**8.12** (207)	**9.50** (242)	**10.62** (270)	8
10" (254)	**8"** (204)	**6"** (153)	-	-	**10.19** (259)	**11.56** (294)	**12.69** (322)	8
12" (305)	**10"** (254)	**8"** (204)	**6"** (153)	-	**12.19** (310)	**13.81** (351)	**15.19** (386)	12
14" (356)	**12"** (305)	**10"** (254)	**8"** (204)	**6"** (153)	**14.19** (360)	**15.81** (401)	**17.19** (437)	12
16" (407)	**14"** (356)	**12"** (305)	**10"** (254)	**8"** (204)	**16.25** (413)	**18.12** (461)	**19.75** (502)	16
18" (458)	**16"** (407)	**14"** (356)	**12"** (305)	**10"** (254)	**18.25** (464)	**20.12** (512)	**21.75** (553)	16
20" (508)	**18"** (458)	**16"** (407)	**14"** (356)	**12"** (305)	**20.25** (515)	**22.12** (562)	**23.75** (604)	20
22" (559)	**20"** (508)	**18"** (458)	**16"** (407)	**14"** (356)	**22.25** (566)	**24.12** (613)	**25.75** (654)	20
24" (610)	**22"** (559)	**20"** (508)	**18"** (458)	**16"** (407)	**24.25** (616)	**26.12** (664)	**27.75** (705)	20
26" (661)	**24"** (610)	**22"** (559)	**20"** (508)	**18"** (458)	**26.25** (667)	**28.50** (724)	**30.25** (769)	24
28" (712)	**26"** (661)	**24"** (610)	**22"** (559)	**20"** (508)	**28.25** (718)	**30.50** (775)	**32.25** (820)	24
30" (762)	**28"** (712)	**26"** (661)	**24"** (610)	**22"** (559)	**30.25** (769)	**32.50** (826)	**34.25** (870)	28
32" (813)	**30"** (762)	**28"** (712)	**26"** (661)	**24"** (610)	**32.25** (820)	**34.50** (877)	**36.25** (921)	28
34" (864)	**32"** (813)	**30"** (762)	**28"** (712)	**26"** (661)	**34.25** (870)	**36.50** (928)	**38.25** (972)	32
36" (915)	**34"** (864)	**32"** (813)	**30"** (762)	**28"** (712)	**36.25** (921)	**38.50** (978)	**40.25** (1022)	32
38" (966)	**36"** (915)	**34"** (864)	**32"** (813)	**30"** (762)	**38.25** (972)	**40.50** (1029)	**42.25** (1073)	36
40" (1016)	**38"** (966)	**36"** (915)	**34"** (864)	**32"** (813)	**40.25** (1022)	**42.50** (1080)	**44.25** (1124)	36
42" (1067)	**40"** (1016)	**38"** (966)	**36"** (915)	**34"** (864)	**42.25** (1073)	**44.50** (1131)	**46.25** (1175)	40
44" (1118)	**42"** (1067)	**40"** (1016)	-	**36"** (915)	**44.25** (1124)	**46.50** (1182)	**48.25** (1226)	40
46" (1069)	**44"** (1118)	**42"** (1067)	-	**38"** (966)	**46.25** (1175)	**48.50** (1232)	**50.25** (1276)	44
48" (1220)	**46"** (1069)	**44"** (1118)	-	**40"** (1016)	**48.25** (1226)	**50.50** (1283)	**52.25** (1327)	44
-	**48"** (1220)	**46"** (1069)	-	**42"** (1067)	**50.25** (1276)	**52.25** (1327)	**52.50** (1334)	48
-	**-**	**48"** (1220)	-	**44"** (1118)	**52.25** (1327)	**54.25** (1378)	**54.50** (1384)	48
-	-	-	-	**46"** (1069)	**54.25** (1378)	**56.25** (1429)	**56.50** (1435)	48
-	-	-	-	**48"** (1220)	**56.25** (1429)	**58.25** (1480)	**58.50** (1486)	50

FAN CURB TERMINATION (FCT)

NOTE: Available for 3G & 4G systems only. Eliminates Curb. Zero Clearances to Combustibles. Roofing materials can be flashed directly to casings.

A = Flue Diameter
B = Outer Casing Diameter:
3G: Flue Diameter Plus 6 Inches
4G: Flue Diameter Plus 8 Inches
C = Square Mounting Support:
Casing Diameter Plus 6 Inches
D = Fan Curb: See Table

	Flue Diameters						
Curb Size - Inches	**8**	**10**	**12**	**14**	**16**	**18**	**20**
18 X 18	X	X	X	3G			
19.5 X 19.5	X	X	X	3G	3G		
22 X 22	X	X	X	X	X		
23 X 23		X	X	X	X		
26.5 X 26.5				X	X	X	X
28 X 28					X	X	X
31.5 X 31.5							X



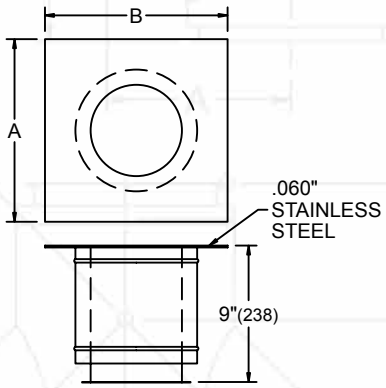
"3G" – Only available on 3G systems. Specify Curb Dimensions when ordering. Consult Factory for additional options.

FAN ADAPTER PLATE (FAP)

Plate dimensions (AxB) = outside dimensions of curb less .25" (7).

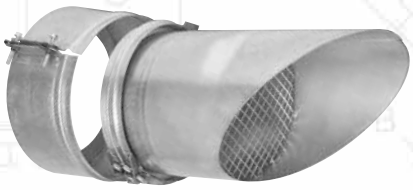
NOTE:

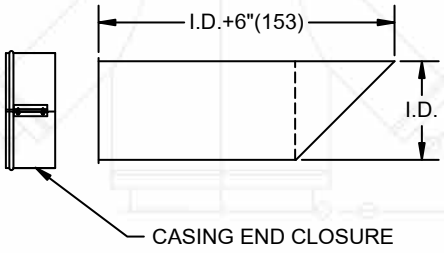
1. Used to connect to the inlet of an upblast fan.
2. Plate size may be varied to fit application. Advise outside dimensions of fan curb at the time of order. (AxB)



MITER CUT (MC)

NOTE: Used for horizontal termination with inline fan. Standard with bird screen.





COMPONENTS

STACK CAP (C)

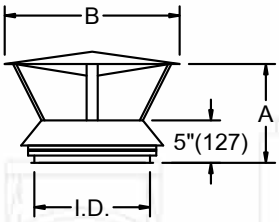
Flow resistance K = 0.5

NOTE: Available through 36" diameter only.

NOTE: Provides partial rain protection. Use of Drain Tee Cap (TC) or Drain Section (DS) is recommended.

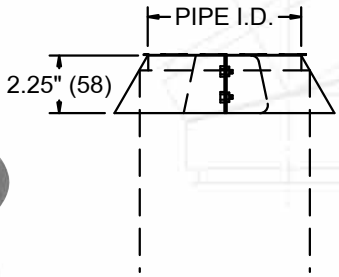
NOTE: Also available with bird screen order as (CB).

PIPE I.D.	A	B	PIPE I.D.	A	B
6" (153)	**8"** (204)	**11"** (280)	**22"** (559)	**20"** (508)	**38"** (966)
8" (204)	**10"** (254)	**14"** (356)	**24"** (610)	**22"** (559)	**41"** (1042)
10" (254)	**12"** (305)	**17"** (432)	**26"** (661)	**23"** (585)	**44"** (1118)
12" (305)	**13"** (331)	**21"** (534)	**28"** (712)	**25"** (635)	**48"** (1220)
14" (356)	**14"** (356)	**24"** (610)	**30"** (762)	**27"** (686)	**52"** (1321)
16" (407)	**16"** (407)	**28"** (712)	**32"** (813)	**28"** (712)	**55"** (1397)
18" (458)	**17"** (432)	**31"** (788)	**34"** (864)	**30"** (762)	**58"** (1474)
20" (508)	**19"** (483)	**34"** (864)	**36"** (915)	**31"** (788)	**62"** (1575)



STACK CLOSURE RING (CR)

NOTE: Used to shield insulation from the weather when open stack is desired. Provide for moisture removal with a Drain Tee Cap (TC) or Drain Section (DS).

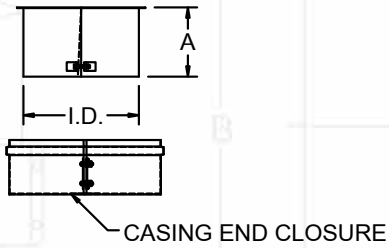


SINGLE WALL BOILER ADAPTER (SBA)

Flow Resistance K= same as pipe

NOTE: A is 6" or 4" (opt.) specify when ordering
e.g. 6PICSBA - A=6" 6PICSBA4 - A=4"

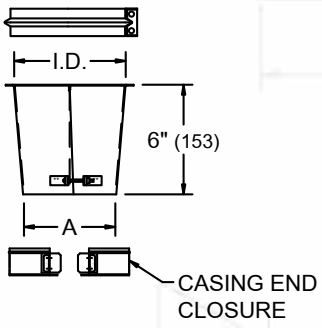
NOTE: Used to attach pipe to straight shank outlets. Closure band included with flange adapter on PIC and IPIC applications. Closure band not required on PSW applications.



REDUCER COLLAR (RC)

Flow Resistance K= same as pipe
Specify 'A' dimension when ordering.
e.g. 6PIC4RC

NOTE: Used to attach pipe to an outlet source of a smaller diameter.
2" (51) maximum reduction.



VENTILATED THIMBLE ASSEMBLIES (VTA–FPVTA)
ROOF SUPPORT ASSEMBLIES (RSA–FPRSA)

STORM COLLAR

SUPPORT COLLAR (RSA ONLY)

LATERAL SPACER RING

THIMBLE

FLASHING

FIXED PITCH FLASHING

Used when pipe passes through a combustible roof structure to reduce clearances to combustibles. The VTA allows for pipe expansion and contraction through the roof. The RSA will support up to 30 ft. of pipe from the roof structure.

Framing Dimensions:

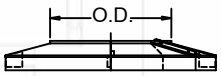
PIC/1G: I.D. + 8"
2G: I.D. + 10"
3G: I.D. + 12"
4G: I.D. + 14"

NOTES:

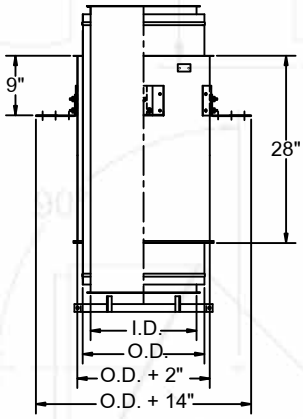
1. Thimbles extend 9" into flashings.
2. Use VTA / RSA on Flat to 1/12 pitch applications.
3. Use FPVTA / FPRSA on 1/12:12/12 pitch applications.

Specify Pitch when ordering.

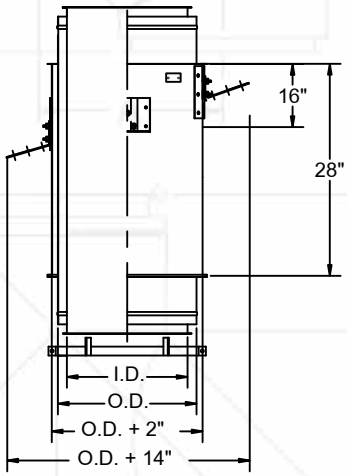
STORM COLLAR



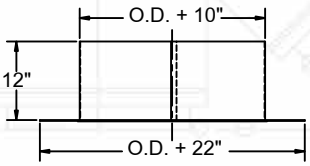
STANDARD THIMBLE

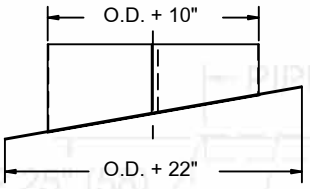


PITCHED THIMBLE



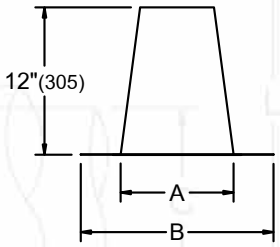
FLASHINGS





TALL CONE FLASHING (F)

Used for flat roof applications.

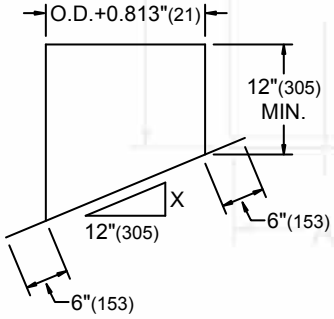


PIPE I.D.	PSW		PIC / 1G		2G		3G		4G	
	A	B	A	B	A	B	A	B	A	B
6" (153)	**10"** (254)	**22"** (559)	**12"** (305)	**24"** (610)	**14"** (356)	**26"** (661)	**16"** (407)	**28"** (712)	**18"** (458)	**30"** (762)
8" (204)	**12"** (305)	**24"** (610)	**14"** (356)	**26"** (661)	**16"** (407)	**28"** (712)	**18"** (458)	**30"** (762)	**20"** (508)	**32"** (813)
10" (254)	**14"** (356)	**26"** (661)	**16"** (407)	**28"** (712)	**18"** (458)	**30"** (762)	**20"** (508)	**32"** (813)	**22"** (559)	**34"** (864)
12" (305)	**16"** (407)	**28"** (712)	**18"** (458)	**30"** (762)	**20"** (508)	**32"** (813)	**22"** (559)	**34"** (864)	**24"** (610)	**36"** (915)
14" (356)	**18"** (458)	**30"** (762)	**20"** (508)	**32"** (813)	**22"** (559)	**34"** (864)	**24"** (610)	**36"** (915)	**26"** (661)	**38"** (966)
16" (407)	**20"** (508)	**32"** (813)	**22"** (559)	**34"** (864)	**24"** (610)	**36"** (915)	**26"** (661)	**38"** (966)	**28"** (712)	**40"** (1016)
18" (458)	**22"** (559)	**34"** (864)	**24"** (610)	**36"** (915)	**26"** (661)	**38"** (966)	**28"** (712)	**40"** (1016)	**30"** (762)	**42"** (1067)
20" (508)	**24"** (610)	**36"** (915)	**26"** (661)	**38"** (966)	**28"** (712)	**40"** (1016)	**30"** (762)	**42"** (1067)	**32"** (813)	**44"** (1118)
22" (559)	**26"** (661)	**38"** (966)	**28"** (712)	**40"** (1016)	**30"** (762)	**42"** (1067)	**32"** (813)	**44"** (1118)	**34"** (864)	**46"** (1169)
24" (610)	**28"** (712)	**40"** (1016)	**30"** (762)	**42"** (1067)	**32"** (813)	**44"** (1118)	**34"** (864)	**46"** (1169)	**36"** (915)	**48"** (1220)
26" (661)	**30"** (762)	**42"** (1067)	**32"** (813)	**44"** (1118)	**34"** (864)	**46"** (1169)	**36"** (915)	**48"** (1220)	**38"** (966)	**50"** (1270)
28" (712)	**32"** (813)	**44"** (1118)	**34"** (864)	**46"** (1169)	**36"** (915)	**48"** (1220)	**38"** (966)	**50"** (1270)	**40"** (1016)	**52"** (1321)
30" (762)	**34"** (864)	**46"** (1169)	**36"** (915)	**48"** (1220)	**38"** (966)	**50"** (1270)	**40"** (1016)	**52"** (1321)	**42"** (1067)	**54"** (1372)
32" (813)	**36"** (915)	**48"** (1220)	**38"** (966)	**50"** (1270)	**40"** (1016)	**52"** (1321)	**42"** (1067)	**54"** (1372)	**44"** (1118)	**56"** (1423)
34" (864)	**38"** (966)	**50"** (1270)	**40"** (1016)	**52"** (1321)	**42"** (1067)	**54"** (1372)	**44"** (1118)	**56"** (1423)	**46"** (1169)	**58"** (1474)
36" (915)	**40"** (1016)	**52"** (1321)	**42"** (1067)	**54"** (1372)	**44"** (1118)	**56"** (1423)	**46"** (1169)	**58"** (1474)	**48"** (1220)	**60"** (1524)
38" (966)	**42"** (1067)	**54"** (1372)	**44"** (1118)	**56"** (1423)	**46"** (1169)	**58"** (1474)	**N/A**	**N/A**	**50"** (1270)	**62"** (1475)
40" (1016)	**44"** (1118)	**56"** (1423)	**46"** (1169)	**58"** (1474)	**48"** (1220)	**60"** (1524)	**N/A**	**N/A**	**52"** (1321)	**64"** (1626)
42" (1067)	**46"** (1169)	**58"** (1474)	**48"** (1220)	**60"** (1524)	**50"** (1270)	**62"** (1475)	**N/A**	**N/A**	**54"** (1372)	**66"** (1677)
44" (1118)	**48"** (1220)	**60"** (1524)	**50"** (1270)	**62"** (1475)	**52"** (1321)	**64"** (1626)	**N/A**	**N/A**	**56"** (1423)	**68"** (1728)
46" (1169)	**50"** (1270)	**62"** (1475)	**52"** (1321)	**64"** (1626)	**54"** (1372)	**66"** (1677)	**N/A**	**N/A**	**58"** (1474)	**70"** (1778)
48" (1220)	**52"** (1321)	**64"** (1626)	**54"** (1372)	**66"** (1677)	**56"** (1423)	**68"** (1728)	**N/A**	**N/A**	**60"** (1524)	**72"** (1829)

FIXED PITCH FLASHING (FPF)

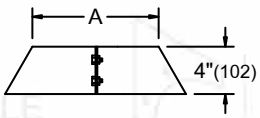
NOTES:

1. X=PITCH RATE, AVAILABLE RATES 1/12 12/12. Please specify pitch rate with order.
2. Storm collar is included with flashing.
3. Fixed pitch flashing is available in sizes from 6" through 36".



STORM COLLAR (SC)

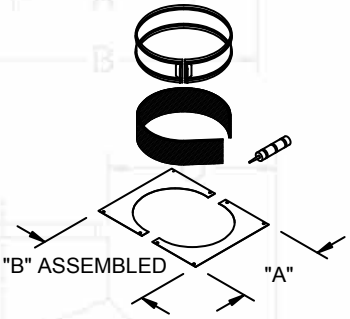
A = Pipe Diameter (O.D.)



THROUGH PENETRATION FIRESTOP KIT (PPK)

NOTE:

1. Kit consists of closure band, plate, insulation and caulk.
2. Used to maintain fire resistance rating of floor or wall at duct penetration.
3. Diameter of penetration is casing diameter + 2 inches.
4. Closure band height is 12" (306).
5. For use on 3G/4G only.



PIPE I.D.	A	B
6" (153)	**18"** (458)	**18"** (458)
8" (204)	**20"** (508)	**20"** (508)
10" (254)	**22"** (559)	**22"** (559)
12" (305)	**24"** (610)	**24"** (610)
14" (356)	**26"** (661)	**26"** (661)
16" (407)	**28"** (712)	**28"** (712)
18" (458)	**30"** (762)	**30"** (762)
20" (508)	**32"** (813)	**32"** (813)
22" (559)	**34"** (864)	**34"** (864)
24" (610)	**36"** (915)	**36"** (915)
26" (661)	**38"** (966)	**38"** (966)
28" (712)	**40"** (1016)	**40"** (1016)
30" (762)	**42"** (1067)	**42"** (1067)
32" (813)	**44"** (1118)	**44"** (1118)
34" (864)	**46"** (1169)	**46"** (1169)
36" (915)	**48"** (1220)	**48"** (1220)

NOTE: 2 KITS required for wall penetration!
Consult factory.

SEALANT REQUIREMENTS

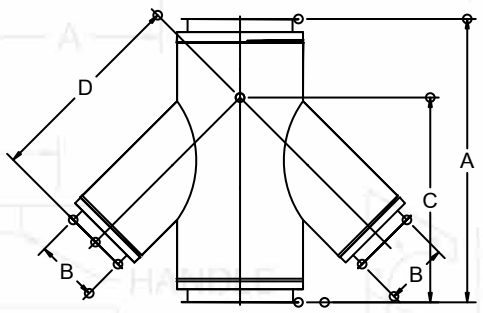
P080 Joint Sealant, use for flue connection – Type I Hoods.
P077 Joint Sealant, use for flue connection – Type II Hoods and casing bands exposed to moisture.
NOTE: Refer to the Installation Instructions for additional information relating to proper sealant selection.

Flue Diameter	Tubes / Joint	Joints / Tube
6"	0.20	5.00
8"	0.20	5.00
10"	0.20	5.00
12"	0.25	4.00
14"	0.25	4.00
16"	0.25	4.00
18"	0.33	3.00
20"	0.33	3.00
22"	0.33	3.00
24"	0.50	2.00
26"	0.50	2.00
28"	0.50	2.00
30"	0.67	1.00
32"	0.67	1.50
34"	0.67	1.50
36"	0.67	1.50
38"	1.00	1.00
40"	1.00	1.00
42"	1.00	1.00
44"	1.00	1.00
46"	1.20	0.80
48"	1.20	0.80

45MT DIMENSIONAL DATA

BODY I.D.

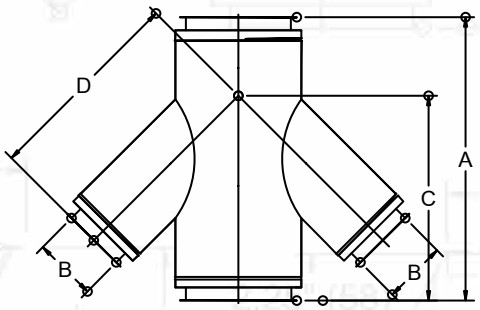
		TAP I.D.												
		48	46	44	42	40	38	36	34	32	30	28	26	24
48PIC	"A"	80.75	77.88	75.13	72.25	69.38	66.63	63.75	60.88	58.13	55.25	52.50	50.60	48.77
	"B"	48	46	44	42	40	38	36	34	32	30	28	26	24
	"C"	65.35	63.94	62.53	61.11	59.70	58.28	56.87	55.46	54.04	52.63	51.21	49.80	48.39
	"D"	65.35	64.35	63.35	62.35	61.35	60.35	59.35	58.35	57.35	56.35	55.35	54.35	53.35
		46	44	42	40	38	36	34	32	30	28	26	24	22
46PIC	"A"	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.26	52.43	49.60	47.77	46.94
	"B"	46	44	42	40	38	38	34	32	30	28	26	24	22
	"C"	62.94	61.53	60.11	58.70	57.28	55.87	54.46	53.04	51.63	50.21	48.80	47.39	45.97
	"D"	62.94	61.94	60.94	59.94	58.94	57.94	56.94	55.94	54.94	53.94	52.94	51.94	50.94
		44	42	40	38	36	34	32	30	28	26	24	22	20
44PIC	"A"	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.26	52.43	49.60	46.77	45.94	44.11
	"B"	44	42	40	38	36	34	32	30	28	26	24	22	20
	"C"	60.53	59.11	57.70	56.28	54.87	53.46	52.04	50.63	49.21	47.80	46.39	44.97	43.56
	"D"	60.53	59.53	58.53	57.53	56.53	55.53	54.53	53.53	52.53	51.53	50.53	49.53	48.53
		42	40	38	36	34	32	30	28	26	24	22	20	18
42PIC	"A"	72.22	69.40	66.57	63.74	60.91	58.08	55.26	52.43	49.60	46.77	44.94	43.11	41.28
	"B"	42	40	38	36	34	32	30	28	26	24	22	20	18
	"C"	58.11	56.70	55.28	53.87	52.46	51.04	49.63	48.21	46.80	45.39	43.97	42.56	41.14
	"D"	58.11	57.11	56.11	55.11	54.11	53.11	52.11	51.11	50.11	49.11	48.11	47.11	46.11
		40	38	36	34	32	30	28	26	24	22	20	18	16
40PIC	"A"	69.40	66.57	63.74	60.91	58.08	55.26	52.43	49.60	46.77	43.94	42.11	40.28	39.46
	"B"	40	38	36	34	32	30	28	26	24	22	20	18	16
	"C"	55.70	54.28	52.87	51.46	50.04	48.63	47.21	45.80	44.39	42.97	41.56	40.14	38.73
	"D"	55.70	54.70	53.70	52.70	51.70	50.70	49.70	48.70	47.70	46.70	45.70	44.70	43.70
		38	36	34	32	30	28	26	24	22	20	18	16	14
38PIC	"A"	66.57	63.74	60.91	58.08	55.26	52.43	49.60	46.77	43.94	41.11	39.28	38.46	37.63
	"B"	38	36	34	32	30	28	26	24	22	20	18	16	14
	"C"	53.28	51.87	50.46	49.04	47.63	46.21	44.80	43.39	41.97	40.56	39.14	37.73	36.31
	"D"	53.28	52.28	51.28	50.28	49.28	48.28	47.28	46.28	45.28	44.28	43.28	42.28	41.28
		36	34	32	30	28	26	24	22	20	18	16	14	12
36PIC	"A"	63.74	60.91	58.08	55.26	52.43	49.60	46.77	43.94	41.11	38.28	37.46	36.63	34.80
	"B"	36	34	32	30	28	26	24	22	20	18	16	14	12
	"C"	50.87	49.46	48.04	46.63	45.21	43.80	42.39	40.97	39.56	38.14	36.73	35.31	33.90
	"D"	50.87	49.87	48.87	47.87	46.87	45.87	44.87	43.87	42.87	41.87	40.87	39.87	38.87
		34	32	30	28	26	24	22	20	18	16	14	12	10
34PIC	"A"	60.91	58.08	55.26	52.43	49.60	46.77	43.94	41.11	38.28	36.46	35.63	33.80	31.97
	"B"	34	32	30	28	26	24	22	20	18	16	14	12	10
	"C"	48.46	47.04	45.63	44.21	42.80	41.39	39.97	38.56	37.14	35.73	34.31	32.90	31.49
	"D"	48.46	47.46	46.46	45.46	44.46	43.46	42.46	41.46	40.46	39.46	38.46	37.46	36.46
		32	30	28	26	24	22	20	18	16	14	12	10	8
32PIC	"A"	58.08	55.26	52.43	49.60	46.77	43.94	41.11	38.28	35.46	34.63	32.80	30.97	29.14
	"B"	32	30	28	26	24	22	20	18	16	14	12	10	8
	"C"	46.04	44.63	43.21	41.80	40.39	38.97	37.56	36.14	34.73	33.31	31.90	30.49	29.07
	"D"	46.04	45.04	44.04	43.04	42.04	41.04	40.04	39.04	38.04	37.04	36.04	35.04	34.04
		30	28	26	24	22	20	18	16	14	12	10	8	6
30PIC	"A"	55.26	52.43	49.60	46.77	43.94	41.11	38.28	35.46	32.63	31.80	29.97	28.14	27.31
	"B"	30	28	26	24	22	20	18	16	14	12	10	8	6
	"C"	43.63	42.21	40.80	39.39	37.97	36.56	35.14	33.73	32.31	30.90	29.49	28.07	26.66
	"D"	43.63	42.63	41.63	40.63	39.63	38.63	37.63	36.63	35.63	34.63	33.63	32.63	31.63
		28	26	24	22	20	18	16	14	12	10	8	6	
28PIC	"A"	52.43	49.60	46.77	43.94	41.11	38.28	35.46	32.63	30.80	28.97	27.14	26.31	
	"B"	28	26	24	22	20	18	16	14	12	10	8	6	
	"C"	41.21	39.80	38.39	36.97	35.56	34.14	32.73	31.31	29.90	28.49	27.07	25.66	
	"D"	41.21	40.21	39.21	38.21	37.21	36.21	35.21	34.21	33.21	32.21	31.21	30.21	
		26	24	22	20	18	16	14	12	10	8	6		
26PIC	"A"	49.60	46.77	43.94	41.11	38.28	35.46	32.63	29.80	27.97	26.14	25.31		
	"B"	26	24	22	20	18	16	14	12	10	8	6		
	"C"	38.80	37.39	35.97	34.56	33.14	31.73	30.31	28.90	27.49	26.07	24.66		
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	29.80	28.80		
		24	22	20	18	16	14	12	10	8	6			
24PIC	"A"	46.77	43.94	41.11	38.28	35.46	32.63	29.80	26.97	25.14	24.31			
	"B"	24	22	20	18	16	14	12	10	8	6			
	"C"	36.39	34.97	33.56	32.14	30.73	29.31	27.90	26.49	25.07	23.66			
	"D"	36.39	35.39	34.39	33.39	32.39	31.39	30.39	29.39	28.39	27.39			
		22	20	18	16	14	12	10	8	6				
22PIC	"A"	43.94	41.11	38.28	35.46	32.63	29.80	26.97	24.14	23.31				
	"B"	22	20	18	16	14	12	10	8	6				
	"C"	33.97	32.56	31.14	29.73	28.31	26.90	25.49	24.07	22.66				
	"D"	33.97	32.97	31.97	30.97	29.97	28.97	27.97	26.97	25.97				
		20	18	16	14	12	10	8	6					
20PIC	"A"	41.11	38.28	35.46	32.63	29.80	26.97	24.14	22.31					
	"B"	20	18	16	14	12	10	8	6					
	"C"	31.56	30.14	28.73	27.31	25.90	24.49	23.07	21.66					
	"D"	31.56	30.56	29.56	28.56	27.56	26.56	25.56	24.56					
		18	16	14	12	10	8	6						
18PIC	"A"	38.28	35.46	32.63	29.80	26.97	24.14	21.31						
	"B"	18	16	14	12	10	8	6						
	"C"	29.14	27.73	26.31	24.90	23.49	22.07	20.66						
	"D"	29.14	28.14	27.14	26.14	25.14	24.14	23.14						
		16	14	12	10	8	6							
16PIC	"A"	35.46	32.63	29.80	26.97	24.14	21.31							
	"B"	16	14	12	10	8	6							
	"C"	26.73	25.31	23.90	22.49	21.07	19.66							
	"D"	26.73	25.73	24.73	23.73	22.73	21.73							
		14	12	10	8	6								
14PIC	"A"	32.63	29.80	26.97	24.14	21.31								
	"B"	14	12	10	8	6								
	"C"	24.31	22.90	21.49	20.07	18.66								
	"D"	24.31	23.31	22.31	21.31	20.31								
		12	10	8	6									
12PIC	"A"	29.79	26.97	24.14	21.31									
	"B"	12	10	8	6									
	"C"	21.89	20.48	19.07	17.65									
	"D"	21.89	20.89	19.89	18.89									
		10	8	6										
10PIC	"A"	26.97	24.14	21.31										
	"B"	10	8	6										
	"C"	19.49	18.07	16.66										
	"D"	19.49	18.49	17.49										
		8	6											
8PIC	"A"	24.14	21.31											
	"B"	8	6											
	"C"	17.07	15.66											
	"D"	17.07	16.07											
		6												
6PIC	"A"	21.31												
	"B"	6												
	"C"	14.66												
	"D"	14.66												



PSW, PIC AND 1G 45MT & DL TABLE IN INCHES

45MT DIMENSIONAL DATA

BODY I.D.		TAP I.D.												
		48	46	44	42	40	38	36	34	32	30	28	26	24
48PIC	"A"	2051	1978	1908	1835	1762	1692	1619	1546	1476	1403	1334	1285	1239
	"B"	1219	1168	1118	1067	1016	965	914	864	813	762	711	660	610
	"C"	1660	1624	1588	1552	1516	1480	1444	1409	1373	1337	1301	1265	1229
	"D"	1660	1635	1609	1584	1558	1533	1508	1482	1457	1431	1406	1381	1355
		46	44	42	40	38	36	34	32	30	28	26	24	22
46PIC	"A"	1978	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1213	1192
	"B"	1168	1118	1067	1016	965	965	864	813	762	711	660	610	559
	"C"	1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1239	1204	1168
	"D"	1599	1573	1548	1522	1497	1472	1446	1421	1395	1370	1345	1319	1294
		44	42	40	38	36	34	32	30	28	26	24	22	20
44PIC	"A"	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1188	1167	1120
	"B"	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
	"C"	1537	1501	1466	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106
	"D"	1537	1512	1487	1461	1436	1410	1385	1360	1334	1309	1283	1258	1233
		42	40	38	36	34	32	30	28	26	24	22	20	18
42PIC	"A"	1834	1763	1691	1619	1547	1475	1403	1332	1260	1188	1142	1095	1049
	"B"	1067	1016	965	914	864	813	762	711	660	610	559	508	457
	"C"	1476	1440	1404	1368	1332	1296	1261	1225	1189	1153	1117	1081	1045
	"D"	1476	1451	1425	1400	1374	1349	1324	1298	1273	1247	1222	1197	1171
		40	38	36	34	32	30	28	26	24	22	20	18	16
40PIC	"A"	1763	1691	1619	1547	1475	1403	1332	1260	1188	1116	1070	1023	1002
	"B"	1016	965	914	864	813	762	711	660	610	559	508	457	406
	"C"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091	1056	1020	984
	"D"	1415	1389	1364	1339	1313	1288	1262	1237	1212	1186	1161	1135	1110
		38	36	34	32	30	28	26	24	22	20	18	16	14
38PIC	"A"	1691	1619	1547	1475	1403	1332	1260	1188	1116	1044	998	977	956
	"B"	965	914	864	813	762	711	660	610	559	508	457	406	356
	"C"	1353	1317	1282	1246	1210	1174	1138	1102	1066	1030	994	958	922
	"D"	1353	1328	1303	1277	1252	1226	1201	1176	1150	1125	1099	1074	1049
		36	34	32	30	28	26	24	22	20	18	16	14	12
36PIC	"A"	1619	1547	1475	1403	1332	1260	1188	1116	1044	972	951	930	884
	"B"	914	864	813	762	711	660	610	559	508	457	406	356	305
	"C"	1292	1256	1220	1184	1148	1112	1077	1041	1005	969	933	897	861
	"D"	1292	1267	1241	1216	1190	1165	1140	1114	1089	1063	1038	1013	987
		34	32	30	28	26	24	22	20	18	16	14	12	10
34PIC	"A"	1547	1475	1403	1332	1260	1188	1116	1044	972	926	905	858	812
	"B"	864	813	762	711	660	610	559	508	457	406	356	305	254
	"C"	1231	1195	1159	1123	1087	1051	1015	979	943	907	872	836	800
	"D"	1231	1205	1180	1155	1129	1104	1078	1053	1028	1002	977	951	926
		32	30	28	26	24	22	20	18	16	14	12	10	8
32PIC	"A"	1475	1403	1332	1260	1188	1116	1044	972	901	880	833	787	740
	"B"	813	762	711	660	610	559	508	457	406	356	305	254	203
	"C"	1169	1134	1098	1062	1026	990	954	918	882	846	810	774	738
	"D"	1169	1144	1119	1093	1068	1042	1017	992	966	941	915	890	865
		30	28	26	24	22	20	18	16	14	12	10	8	6
30PIC	"A"	1403	1332	1260	1188	1116	1044	972	901	829	808	761	715	694
	"B"	762	711	660	610	559	508	457	406	356	305	254	203	152
	"C"	1108	1072	1036	1000	964	929	893	857	821	785	749	713	677
	"D"	1108	1083	1057	1032	1007	981	956	930	905	880	854	829	803
		28	26	24	22	20	18	16	14	12	10	8	6	
28PIC	"A"	1332	1260	1188	1116	1044	972	901	829	782	736	689	668	
	"B"	711	660	610	559	508	457	406	356	305	254	203	152	
	"C"	1047	1011	975	939	903	867	831	795	759	724	688	652	
	"D"	1047	1021	996	971	945	920	894	869	844	818	793	767	
		26	24	22	20	18	16	14	12	10	8	6		
26PIC	"A"	1260	1188	1116	1044	972	901	829	757	710	664	643		
	"B"	660	610	559	508	457	406	356	305	254	203	152		
	"C"	985	950	914	878	842	806	770	734	698	662	626		
	"D"	985	960	935	909	884	858	833	808	782	757	731		
		24	22	20	18	16	14	12	10	8	6			
24PIC	"A"	1188	1116	1044	972	901	829	757	685	639	618			
	"B"	610	559	508	457	406	356	305	254	203	152			
	"C"	924	888	852	816	780	745	709	673	637	601			
	"D"	924	899	873	848	823	797	772	746	721	696			
		22	20	18	16	14	12	10	8	6				
22PIC	"A"	1116	1044	972	901	829	757	685	613	592				
	"B"	559	508	457	406	356	305	254	203	152				
	"C"	863	827	791	755	719	683	647	611	575				
	"D"	863	837	812	787	761	736	710	685	660				
		20	18	16	14	12	10	8	6					
20PIC	"A"	1044	972	901	829	757	685	613	567					
	"B"	508	457	406	356	305	254	203	152					
	"C"	802	766	730	694	658	622	586	550					
	"D"	802	776	751	725	700	675	649	624					
		18	16	14	12	10	8	6						
18PIC	"A"	972	901	829	757	685	613	541						
	"B"	457	406	356	305	254	203	152						
	"C"	740	704	668	632	597	561	525						
	"D"	740	715	689	664	639	613	588						
		16	14	12	10	8	6							
16PIC	"A"	901	829	757	685	613	541							
	"B"	406	356	305	254	203	152							
	"C"	679	643	607	571	535	499							
	"D"	679	653	628	603	577	552							
		14	12	10	8	6								
14PIC	"A"	829	757	685	613	541								
	"B"	356	305	254	203	152								
	"C"	618	582	546	510	474								
	"D"	618	592	567	541	516								
		12	10	8	6									
12PIC	"A"	757	685	613	541									
	"B"	305	254	203	152									
	"C"	556	520	484	448									
	"D"	556	531	505	480									
		10	8	6										
10PIC	"A"	685	613	541										
	"B"	254	203	152										
	"C"	495	459	423										
	"D"	495	470	444										
		8	6											
8PIC	"A"	613	541											
	"B"	203	152											
	"C"	434	398											
	"D"	434	408											
		6												
6PIC	"A"	541												
	"B"	152												
	"C"	372												
	"D"	372												

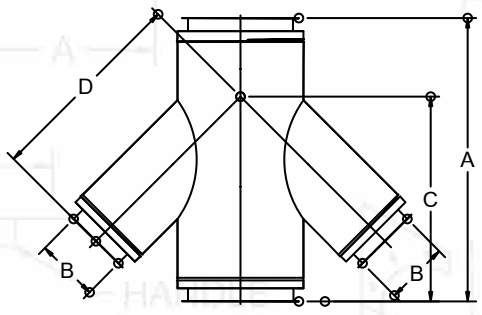


PSW, PIC AND 1G 45MT & DL TABLE IN METRIC

45MT DIMENSIONAL DATA

BODY I.D.

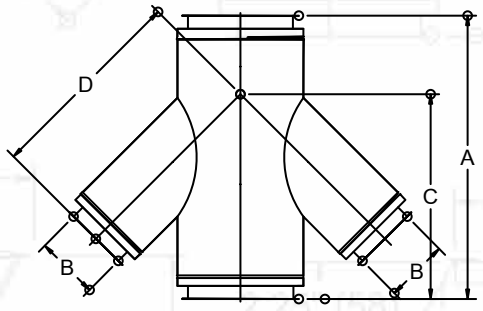
		TAP I.D.													
		48	46	44	42	40	38	36	34	32	30	28	26	24	22
48PIC	"A"	83.53	80.70	77.87	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	53.42	51.59	50.77
	"B"	48	46	44	42	40	38	36	34	32	30	28	26	24	22
	"C"	67.77	66.35	64.94	63.52	62.11	60.70	59.28	57.87	56.45	55.04	53.63	52.21	50.80	49.38
	"D"	67.77	66.77	65.77	64.77	63.77	62.77	61.77	60.77	59.77	58.77	57.77	56.77	55.77	54.77
		46	44	42	40	38	36	34	32	30	28	26	24	22	20
46PIC	"A"	80.70	77.87	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	50.59	49.77	47.94
	"B"	46	44	42	40	38	36	34	32	30	28	26	24	22	20
	"C"	65.35	63.94	62.52	61.11	59.70	58.28	56.87	55.45	54.04	52.63	51.21	49.80	48.38	46.97
	"D"	65.35	64.35	63.35	62.35	61.35	60.35	59.35	58.35	57.35	56.35	55.35	54.35	53.35	52.35
		44	42	40	38	36	34	32	30	28	26	24	22	20	18
44PIC	"A"	77.87	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	48.77	46.94	45.11
	"B"	44	42	40	38	36	34	32	30	28	26	24	22	20	18
	"C"	62.94	61.52	60.11	58.70	57.28	55.87	54.45	53.04	51.63	50.21	48.80	47.38	45.97	44.56
	"D"	62.94	61.94	60.94	59.94	58.94	57.94	56.94	55.94	54.94	53.94	52.94	51.94	50.94	49.94
		42	40	38	36	34	32	30	28	26	24	22	20	18	16
42PIC	"A"	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	47.77	45.94	44.11	43.28
	"B"	42	40	38	36	34	32	30	28	26	24	22	20	18	16
	"C"	60.52	59.11	57.70	56.28	54.87	53.45	52.04	50.63	49.21	47.80	46.38	44.97	43.56	42.14
	"D"	60.52	59.52	58.52	57.52	56.52	55.52	54.52	53.52	52.52	51.52	50.52	49.52	48.52	47.52
		40	38	36	34	32	30	28	26	24	22	20	18	16	14
40PIC	"A"	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	44.94	43.11	42.28	40.63
	"B"	40	38	36	34	32	30	28	26	24	22	20	18	16	14
	"C"	58.11	56.70	55.28	53.87	52.45	51.04	49.63	48.21	46.80	45.38	43.97	42.56	41.14	39.73
	"D"	58.11	57.11	56.11	55.11	54.11	53.11	52.11	51.11	50.11	49.11	48.11	47.11	46.11	45.11
		38	36	34	32	30	28	26	24	22	20	18	16	14	12
38PIC	"A"	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	42.11	41.28	39.63	38.63
	"B"	38	36	34	32	30	28	26	24	22	20	18	16	14	12
	"C"	55.70	54.28	52.87	51.45	50.04	48.63	47.21	45.80	44.38	42.97	41.56	40.14	38.73	37.31
	"D"	55.70	54.70	53.70	52.70	51.70	50.70	49.70	48.70	47.70	46.70	45.70	44.70	43.70	42.70
		36	34	32	30	28	26	24	22	20	18	16	14	12	10
36PIC	"A"	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	40.28	38.63	37.63	35.80
	"B"	36	34	32	30	28	26	24	22	20	18	16	14	12	10
	"C"	53.28	51.87	50.45	49.04	47.63	46.21	44.80	43.38	41.97	40.56	39.14	37.73	36.31	34.90
	"D"	53.28	52.28	51.28	50.28	49.28	48.28	47.28	46.28	45.28	44.28	43.28	42.28	41.28	40.28
		34	32	30	28	26	24	22	20	18	16	14	12	10	8
34PIC	"A"	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	39.28	37.63	36.63	34.80	32.97
	"B"	34	32	30	28	26	24	22	20	18	16	14	12	10	8
	"C"	50.87	49.45	48.04	46.63	45.21	43.80	42.38	40.97	39.56	38.14	36.73	35.31	33.90	32.49
	"D"	50.87	49.87	48.87	47.87	46.87	45.87	44.87	43.87	42.87	41.87	40.87	39.87	38.87	37.87
		32	30	28	26	24	22	20	18	16	14	12	10	8	6
32PIC	"A"	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	36.63	35.63	33.80	31.97	31.39
	"B"	32	30	28	26	24	22	20	18	16	14	12	10	8	6
	"C"	48.45	47.04	45.63	44.21	42.80	41.38	39.97	38.56	37.14	35.73	34.31	32.90	31.49	30.07
	"D"	48.45	47.45	46.45	45.45	44.45	43.45	42.45	41.45	40.45	39.45	38.45	37.45	36.45	35.45
		30	28	26	24	22	20	18	16	14	12	10	8	6	
30PIC	"A"	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	34.63	32.80	30.97	30.39	
	"B"	30	28	26	24	22	20	18	16	14	12	10	8	6	
	"C"	46.04	44.63	43.21	41.80	40.38	38.97	37.56	36.14	34.73	33.31	31.90	30.49	29.07	
	"D"	46.04	45.04	44.04	43.04	42.04	41.04	40.04	39.04	38.04	37.04	36.04	35.04	34.04	
		28	26	24	22	20	18	16	14	12	10	8	6		
28PIC	"A"	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	33.63	31.80	29.97	29.39		
	"B"	28	26	24	22	20	18	16	14	12	10	8	6		
	"C"	43.63	42.21	40.80	39.38	37.97	36.56	35.14	33.73	32.31	30.90	29.49	28.07		
	"D"	43.63	42.63	41.63	40.63	39.63	38.63	37.63	36.63	35.63	34.63	33.63	32.63		
		26	24	22	20	18	16	14	12	10	8	6			
26PIC	"A"	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	30.80	28.97	28.39			
	"B"	26	24	22	20	18	16	14	12	10	8	6			
	"C"	41.21	39.80	38.38	36.97	35.56	34.14	32.73	31.31	29.90	28.49	27.07			
	"D"	41.21	40.21	39.21	38.21	37.21	36.21	35.21	34.21	33.21	32.21	31.21			
		24	22	20	18	16	14	12	10	8	6				
24PIC	"A"	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.97	27.39				
	"B"	24	22	20	18	16	14	12	10	8	6				
	"C"	38.80	37.38	35.97	34.56	33.14	31.73	30.31	28.90	27.49	26.07				
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	29.80				
		22	20	18	16	14	12	10	8	6					
22PIC	"A"	46.77	43.94	41.11	38.28	35.45	32.63	29.80	26.97	26.39					
	"B"	22	20	18	16	14	12	10	8	6					
	"C"	36.38	34.97	33.56	32.14	30.73	29.31	27.90	26.49	25.07					
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38	29.38	28.38					
		20	18	16	14	12	10	8	6						
20PIC	"A"	43.94	41.11	38.28	35.45	32.63	29.80	26.97	24.14						
	"B"	20	18	16	14	12	10	8	6						
	"C"	33.97	32.56	31.14	29.73	28.31	26.90	25.49	24.07						
	"D"	33.97	32.97	31.97	30.97	29.97	28.97	27.97	26.97						
		18	16	14	12	10	8	6							
18PIC	"A"	41.11	38.28	35.45	32.63	29.80	26.97	24.14							
	"B"	18	16	14	12	10	8	6							
	"C"	31.56	30.14	28.73	27.31	25.90	24.49	23.07							
	"D"	31.56	30.56	29.56	28.56	27.56	26.56	25.56							
		16	14	12	10	8	6								
16PIC	"A"	38.28	35.45	32.63	29.80	26.97	24.14								
	"B"	16	14	12	10	8	6								
	"C"	29.14	27.73	26.31	24.90	23.49	22.07								
	"D"	29.14	28.14	27.14	26.14	25.14	24.14								
		14	12	10	8	6									
14PIC	"A"	35.45	32.63	29.80	26.97	24.14									
	"B"	14	12	10	8	6									
	"C"	26.73	25.31	23.90	22.49	21.07									
	"D"	26.73	25.73	24.73	23.73	22.73									
		12	10	8	6										
12PIC	"A"	32.63	29.80	26.97	24.14										
	"B"	12	10	8	6										
	"C"	24.31	22.90	21.49	20.07										
	"D"	24.31	23.31	22.31	21.31										
		10	8	6											
10PIC	"A"	29.80	26.97	24.14											
	"B"	10	8	6											
	"C"	21.90	20.49	19.07											
	"D"	21.90	20.90	19.90											
		8	6												
8PIC	"A"	26.97	24.14												
	"B"	8	6												
	"C"	19.49	18.07												
	"D"	19.49	18.49												
		6													
6PIC	"A"	24.14													
	"B"	6													
	"C"	17.07													
	"D"	17.07													



2G 45MT & DL TABLE IN INCHES

45MT DIMENSIONAL DATA

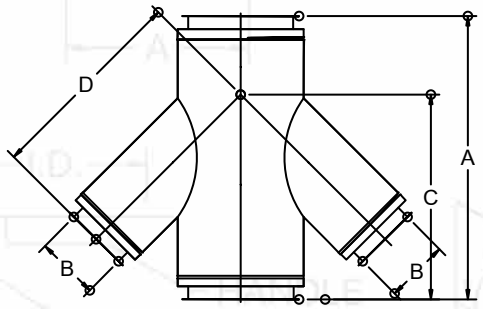
BODY I.D.		TAP I.D.													
		48	46	44	42	40	38	36	34	32	30	28	26	24	22
48PIC	"A"	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1357	1310	1289
	"B"	1219	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559
	"C"	1721	1685	1649	1613	1578	1542	1506	1470	1434	1398	1362	1326	1290	1254
	"D"	1721	1696	1670	1645	1620	1594	1569	1543	1518	1493	1467	1442	1416	1391
		46	44	42	40	38	36	34	32	30	28	26	24	22	20
46PIC	"A"	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1332	1285	1264	1218
	"B"	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
	"C"	1660	1624	1588	1552	1516	1480	1444	1409	1373	1337	1301	1265	1229	1193
	"D"	1660	1635	1609	1584	1558	1533	1508	1482	1457	1431	1406	1381	1355	1330
		44	42	40	38	36	34	32	30	28	26	24	22	20	18
44PIC	"A"	1978	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1239	1192	1146
	"B"	1118	1067	1016	965	914	864	813	762	711	660	610	559	508	457
	"C"	1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1239	1204	1168	1132
	"D"	1599	1573	1548	1522	1497	1472	1446	1421	1395	1370	1345	1319	1294	1268
		42	40	38	36	34	32	30	28	26	24	22	20	18	16
42PIC	"A"	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1213	1167	1120	1099
	"B"	1067	1016	965	914	864	813	762	711	660	610	559	508	457	406
	"C"	1537	1501	1465	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106	1070
	"D"	1537	1512	1486	1461	1436	1410	1385	1359	1334	1309	1283	1258	1232	1207
		40	38	36	34	32	30	28	26	24	22	20	18	16	14
40PIC	"A"	1834	1763	1691	1619	1547	1475	1403	1332	1260	1188	1141	1095	1074	1032
	"B"	1016	965	914	864	813	762	711	660	610	559	508	457	406	356
	"C"	1476	1440	1404	1368	1332	1296	1260	1225	1189	1153	1117	1081	1045	1009
	"D"	1476	1451	1425	1400	1374	1349	1324	1298	1273	1247	1222	1197	1171	1146
		38	36	34	32	30	28	26	24	22	20	18	16	14	12
38PIC	"A"	1763	1691	1619	1547	1475	1403	1332	1260	1188	1116	1070	1049	1007	981
	"B"	965	914	864	813	762	711	660	610	559	508	457	406	356	305
	"C"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091	1055	1020	984	948
	"D"	1415	1389	1364	1338	1313	1288	1262	1237	1211	1186	1161	1135	1110	1084
		36	34	32	30	28	26	24	22	20	18	16	14	12	10
36PIC	"A"	1691	1619	1547	1475	1403	1332	1260	1188	1116	1044	1023	981	956	909
	"B"	914	864	813	762	711	660	610	559	508	457	406	356	305	254
	"C"	1353	1317	1282	1246	1210	1174	1138	1102	1066	1030	994	958	922	886
	"D"	1353	1328	1303	1277	1252	1226	1201	1176	1150	1125	1099	1074	1049	1023
		34	32	30	28	26	24	22	20	18	16	14	12	10	8
34PIC	"A"	1619	1547	1475	1403	1332	1260	1188	1116	1044	998	956	930	884	837
	"B"	864	813	762	711	660	610	559	508	457	406	356	305	254	203
	"C"	1292	1256	1220	1184	1148	1112	1077	1041	1005	969	933	897	861	825
	"D"	1292	1267	1241	1216	1190	1165	1140	1114	1089	1063	1038	1013	987	962
		32	30	28	26	24	22	20	18	16	14	12	10	8	6
32PIC	"A"	1547	1475	1403	1332	1260	1188	1116	1044	972	930	905	858	812	797
	"B"	813	762	711	660	610	559	508	457	406	356	305	254	203	152
	"C"	1231	1195	1159	1123	1087	1051	1015	979	943	907	872	836	800	764
	"D"	1231	1205	1180	1155	1129	1104	1078	1053	1028	1002	977	951	926	901
		30	28	26	24	22	20	18	16	14	12	10	8	6	
30PIC	"A"	1475	1403	1332	1260	1188	1116	1044	972	901	880	833	787	772	
	"B"	762	711	660	610	559	508	457	406	356	305	254	203	152	
	"C"	1169	1133	1098	1062	1026	990	954	918	882	846	810	774	738	
	"D"	1169	1144	1119	1093	1068	1042	1017	992	966	941	915	890	865	
		28	26	24	22	20	18	16	14	12	10	8	6		
28PIC	"A"	1403	1332	1260	1188	1116	1044	972	901	854	808	761	747		
	"B"	711	660	610	559	508	457	406	356	305	254	203	152		
	"C"	1108	1072	1036	1000	964	928	893	857	821	785	749	713		
	"D"	1108	1083	1057	1032	1006	981	956	930	905	879	854	829		
		26	24	22	20	18	16	14	12	10	8	6			
26PIC	"A"	1332	1260	1188	1116	1044	972	901	829	782	736	721			
	"B"	660	610	559	508	457	406	356	305	254	203	152			
	"C"	1047	1011	975	939	903	867	831	795	759	724	688			
	"D"	1047	1021	996	971	945	920	894	869	844	818	793			
		24	22	20	18	16	14	12	10	8	6				
24PIC	"A"	1260	1188	1116	1044	972	901	829	757	710	696				
	"B"	610	559	508	457	406	356	305	254	203	152				
	"C"	985	950	914	878	842	806	770	734	698	662				
	"D"	985	960	935	909	884	858	833	808	782	757				
		22	20	18	16	14	12	10	8	6					
22PIC	"A"	1188	1116	1044	972	901	829	757	685	670					
	"B"	559	508	457	406	356	305	254	203	152					
	"C"	924	888	852	816	780	745	709	673	637					
	"D"	924	899	873	848	823	797	772	746	721					
		20	18	16	14	12	10	8	6						
20PIC	"A"	1116	1044	972	901	829	757	685	613						
	"B"	508	457	406	356	305	254	203	152						
	"C"	863	827	791	755	719	683	647	611						
	"D"	863	837	812	787	761	736	710	685						
		6	6	6	6	6	6	6							
18PIC	"A"	1044	972	901	829	757	685	613							
	"B"	457	406	356	305	254	203	152							
	"C"	801	766	730	694	658	622	586							
	"D"	801	776	751	725	700	674	649							
		16	14	12	10	8	6								
16PIC	"A"	972	901	829	757	685	613								
	"B"	406	356	305	254	203	152								
	"C"	740	704	668	632	597	561								
	"D"	740	715	689	664	639	613								
		14	12	10	8	6									
14PIC	"A"	901	829	757	685	613									
	"B"	356	305	254	203	152									
	"C"	679	643	607	571	535									
	"D"	679	653	628	603	577									
		12	10	8	6										
12PIC	"A"	829	757	685	613										
	"B"	305	254	203	152										
	"C"	618	582	546	510										
	"D"	618	592	567	541										
		10	8	6											
10PIC	"A"	757	685	613											
	"B"	254	203	152											
	"C"	556	520	484											
	"D"	556	531	505											
		8	6												
8PIC	"A"	685	613												
	"B"	203	152												
	"C"	495	459												
	"D"	495	470												
		6													
6PIC	"A"	613													
	"B"	152													
	"C"	434													
	"D"	434													



2G 45MT & DL TABLE IN METRIC

45MT DIMENSIONAL DATA

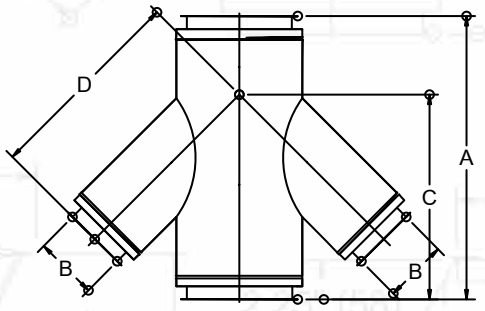
BODY I.D.		TAP I.D.									
36PIC		36	34	32	30	28	26	24	22	20	18
	"A"	69.39	66.57	63.74	60.91	58.08	55.25	52.43	49.59	46.76	43.93
	"B"	36	34	32	30	28	26	24	22	20	18
	"C"	55.70	54.28	52.87	51.46	50.04	48.63	47.21	45.80	44.38	42.96
	"D"	55.70	54.70	53.70	52.70	51.70	50.70	49.70	48.70	47.70	46.70
34PIC		34	32	30	28	26	24	22	20	18	16
	"A"	66.57	63.74	60.91	58.08	55.25	52.43	49.59	46.76	43.93	42.10
	"B"	34	32	30	28	26	24	22	20	18	16
	"C"	53.28	51.87	50.46	49.04	47.63	46.21	44.80	43.38	41.96	40.55
	"D"	53.28	52.28	51.28	50.28	49.28	48.28	47.28	46.28	45.28	44.28
32PIC		32	30	28	26	24	22	20	18	16	14
	"A"	63.74	60.91	58.08	55.25	52.43	49.59	46.76	43.93	41.10	36.63
	"B"	32	30	28	26	27	22	20	18	16	14
	"C"	50.87	49.46	48.04	46.63	45.21	43.80	42.38	40.96	39.55	38.14
	"D"	50.87	49.87	48.87	47.87	46.87	45.87	44.87	43.87	42.87	41.87
30PIC		30	28	26	24	22	20	18	16	14	12
	"A"	60.91	58.08	55.25	52.43	49.59	46.76	43.93	41.10	38.27	34.63
	"B"	30	28	26	24	24	20	18	16	14	12
	"C"	48.46	47.04	45.63	44.21	42.80	41.38	39.96	38.55	37.14	35.72
	"D"	48.46	47.46	46.46	45.46	44.46	43.46	42.46	41.46	40.46	39.46
28PIC		28	26	24	22	20	18	16	14	12	10
	"A"	58.08	55.25	52.43	49.59	46.76	43.93	41.10	38.27	33.63	31.80
	"B"	28	26	24	22	22	18	16	14	12	10
	"C"	46.04	44.63	43.21	41.80	40.38	38.96	37.55	36.14	34.72	33.31
	"D"	46.04	45.04	44.04	43.04	42.04	41.04	40.04	39.04	38.04	37.04
26PIC		26	24	22	20	18	16	14	12	10	8
	"A"	55.25	52.43	49.59	46.76	43.93	41.10	38.27	35.45	30.80	30.79
	"B"	26	24	22	20	20	16	14	12	10	8
	"C"	43.63	42.21	40.80	39.38	37.96	36.55	35.14	33.72	32.31	30.89
	"D"	43.63	42.63	41.63	40.63	39.63	38.63	37.63	36.63	33.21	32.21
24PIC		24	22	20	18	16	14	12	10	8	6
	"A"	52.43	49.59	46.76	43.93	41.10	38.27	35.45	32.62	29.79	26.97
	"B"	24	22	20	18	16	14	12	10	8	6
	"C"	41.21	39.80	38.38	36.96	35.55	34.14	32.72	31.31	29.89	28.48
	"D"	41.21	40.21	39.21	38.21	37.21	36.21	35.21	34.21	33.21	32.21
22PIC		22	20	18	16	14	12	10	8	6	
	"A"	49.59	46.76	43.93	41.10	38.27	35.45	32.62	29.79	26.97	
	"B"	22	20	18	16	14	12	10	8	6	
	"C"	38.80	37.38	35.96	34.55	33.14	31.72	30.31	28.89	27.48	
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	
20PIC		20	18	16	14	12	10	8	6		
	"A"	46.76	43.93	41.10	38.27	35.45	32.62	29.79	26.97		
	"B"	20	18	16	14	12	10	8	6		
	"C"	36.38	34.96	33.55	32.14	30.72	29.31	27.89	26.48		
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38	29.38		
18PIC		18	16	14	12	10	8	6			
	"A"	43.93	41.10	38.27	35.45	32.62	29.79	26.97			
	"B"	18	16	14	12	10	8	6			
	"C"	33.96	32.55	31.14	29.72	28.31	26.89	25.48			
	"D"	33.96	32.96	31.96	30.96	29.96	28.96	27.96			
16PIC		16	14	12	10	8	6				
	"A"	41.10	38.27	35.45	32.62	29.79	26.97				
	"B"	16	14	12	10	8	6				
	"C"	31.55	30.14	28.72	27.31	25.89	24.48				
	"D"	31.55	30.55	29.55	28.55	27.55	26.55				
14PIC		14	12	10	8	6					
	"A"	38.27	35.45	32.62	29.79	26.97					
	"B"	14	12	10	8	6					
	"C"	29.14	27.72	26.31	24.89	23.48					
	"D"	29.14	28.14	27.14	26.14	25.14					
12PIC		12	10	8	6						
	"A"	35.45	32.62	29.79	26.97						
	"B"	12	10	8	6						
	"C"	26.72	25.31	23.89	22.48						
	"D"	26.72	25.72	24.72	23.72						
10PIC		10	8	6							
	"A"	32.62	29.79	26.97							
	"B"	10	8	6							
	"C"	24.31	22.89	21.48							
	"D"	24.31	23.31	22.31							
8PIC		8	6								
	"A"	29.79	26.97								
	"B"	8	6								
	"C"	21.89	20.48								
	"D"	21.89	20.89								
6PIC		6									
	"A"	26.97									
	"B"	6									
	"C"	19.48									
	"D"	19.48									



3G 45MT & DL TABLE IN INCHES

45MT DIMENSIONAL DATA

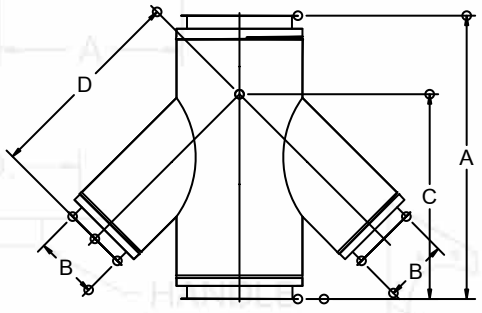
BODY I.D.		TAP I.D.									
		36	34	32	30	28	26	24	22	20	18
36PIC	"A"	1763	1691	1619	1547	1475	1403	1332	1260	1188	1116
	"B"	914	864	813	762	711	660	610	559	508	457
	"C"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091
	"D"	1415	1389	1364	1339	1313	1288	1262	1237	1212	1186
		34	32	30	28	26	24	22	20	18	16
34PIC	"A"	1691	1619	1547	1475	1403	1332	1260	1188	1116	1069
	"B"	864	813	762	711	660	610	559	508	457	406
	"C"	1353	1317	1282	1246	1210	1174	1138	1102	1066	1030
	"D"	1353	1328	1303	1277	1252	1226	1201	1176	1150	1125
		32	30	28	26	24	22	20	18	16	14
32PIC	"A"	1619	1547	1475	1403	1332	1260	1188	1116	1044	930
	"B"	813	762	711	660	686	559	508	457	406	356
	"C"	1292	1256	1220	1184	1148	1113	1076	1040	1005	969
	"D"	1292	1267	1241	1216	1190	1165	1140	1114	1089	1063
		30	28	26	24	22	20	18	16	14	12
30PIC	"A"	1547	1475	1403	1332	1260	1188	1116	1044	972	880
	"B"	762	711	660	610	610	508	457	406	356	305
	"C"	1231	1195	1159	1123	1087	1051	1015	979	943	907
	"D"	1231	1205	1180	1155	1129	1104	1078	1053	1028	1002
		28	26	24	22	20	18	16	14	12	10
28PIC	"A"	1475	1403	1332	1260	1188	1116	1044	972	854	808
	"B"	711	660	610	559	559	457	406	356	305	254
	"C"	1169	1134	1098	1062	1026	990	954	918	882	846
	"D"	1169	1144	1119	1093	1068	1042	1017	992	966	941
		26	24	22	20	18	16	14	12	10	8
26PIC	"A"	1403	1332	1260	1188	1116	1044	972	900	782	782
	"B"	660	610	559	508	508	406	356	305	254	203
	"C"	1108	1072	1036	1000	964	928	892	856	821	785
	"D"	1108	1083	1057	1032	1007	981	956	930	844	818
		24	22	20	18	16	14	12	10	8	6
24PIC	"A"	1332	1260	1188	1116	1044	972	900	828	757	685
	"B"	610	559	508	457	406	356	305	254	203	152
	"C"	1047	1011	975	939	903	867	831	795	759	723
	"D"	1047	1021	996	971	945	920	894	869	844	818
		22	20	18	16	14	12	10	8	6	
22PIC	"A"	1260	1188	1116	1044	972	900	828	757	685	
	"B"	559	508	457	406	356	305	254	203	152	
	"C"	986	949	913	878	842	806	770	734	698	
	"D"	986	960	935	909	884	859	833	808	782	
		20	18	16	14	12	10	8	6		
20PIC	"A"	1188	1116	1044	972	900	828	757	685		
	"B"	508	457	406	356	305	254	203	152		
	"C"	924	888	852	816	780	744	709	673		
	"D"	924	899	873	848	822	797	772	746		
		18	16	14	12	10	8	6			
18PIC	"A"	1116	1044	972	900	828	757	685			
	"B"	457	406	356	305	254	203	152			
	"C"	863	827	791	755	719	683	647			
	"D"	863	837	812	786	761	736	710			
		16	14	12	10	8	6				
16PIC	"A"	1044	972	900	828	757	685				
	"B"	406	356	305	254	203	152				
	"C"	801	765	730	694	658	622				
	"D"	801	776	751	725	700	674				
		14	12	10	8	6					
14PIC	"A"	972	900	828	757	685					
	"B"	356	305	254	203	152					
	"C"	740	704	668	632	596					
	"D"	740	715	689	664	638					
		12	10	8	6						
12PIC	"A"	900	828	757	685						
	"B"	305	254	203	152						
	"C"	679	643	607	571						
	"D"	679	653	628	603						
		10	8	6							
10PIC	"A"	828	757	685							
	"B"	254	203	152							
	"C"	617	582	546							
	"D"	617	592	567							
		8	6								
8PIC	"A"	757	685								
	"B"	203	152								
	"C"	556	520								
	"D"	556	531								
		6									
6PIC	"A"	685									
	"B"	152									
	"C"	495									
	"D"	495									



3G 45MT & DL TABLE IN METRIC

45MT DIMENSIONAL DATA

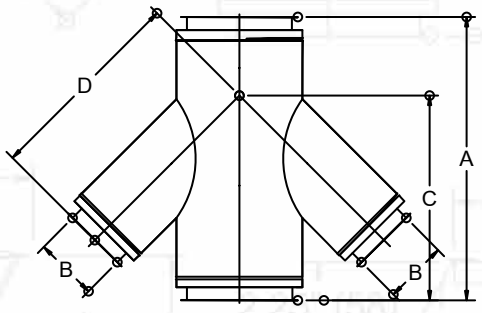
BODY I.D.		TAP I.D.												
		48	46	44	42	40	38	36	34	32	30	28	26	24
48PIC	"A"	89.19	86.36	83.54	80.71	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	56.25
	"B"	48	46	44	42	40	38	36	34	32	30	28	26	24
	"C"	72.60	71.18	69.77	68.35	66.94	65.53	64.11	62.70	61.28	59.87	58.45	57.04	55.63
	"D"	72.60	71.60	70.60	69.60	68.60	67.60	66.60	65.60	64.60	63.60	62.60	61.60	60.60
		46	44	42	40	38	36	34	32	30	28	26	24	22
46PIC	"A"	86.36	83.54	80.71	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.25	54.42
	"B"	46	44	42	40	38	36	34	32	30	28	26	24	22
	"C"	70.18	68.77	67.35	65.94	64.53	63.11	61.70	60.28	58.87	57.45	56.04	54.63	53.21
	"D"	70.18	69.18	68.18	67.18	66.18	65.18	64.18	63.18	62.18	61.18	60.18	59.18	58.18
		44	42	40	38	36	34	32	30	28	26	24	22	20
44PIC	"A"	83.54	80.71	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.25	53.42	51.60
	"B"	44	42	40	38	36	34	32	30	28	26	24	22	20
	"C"	67.77	66.35	64.94	63.53	62.11	60.70	59.28	57.87	56.45	55.04	53.63	52.21	50.80
	"D"	67.77	66.77	65.77	64.77	63.77	62.77	61.77	60.77	59.77	58.77	57.77	56.77	55.77
		42	40	38	36	34	32	30	28	26	24	22	20	18
42PIC	"A"	80.71	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.25	52.42	50.60	49.77
	"B"	42	40	38	36	34	32	30	28	26	24	22	20	18
	"C"	65.35	63.94	62.53	61.11	59.70	58.28	56.87	55.45	54.04	52.63	51.21	49.80	48.38
	"D"	65.35	64.35	63.35	62.35	61.35	60.35	59.35	58.35	57.35	56.35	55.35	54.35	53.35
		40	38	36	34	32	30	28	26	24	22	20	18	16
40PIC	"A"	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.25	52.42	49.60	48.77	46.94
	"B"	40	38	36	34	32	30	28	26	24	22	20	18	16
	"C"	62.94	61.53	60.11	58.70	57.28	55.87	54.45	53.04	51.63	50.21	48.80	47.38	45.97
	"D"	62.94	61.94	60.94	59.94	58.94	57.94	56.94	55.94	54.94	53.94	52.94	51.94	50.94
		38	36	34	32	30	28	26	24	22	20	18	16	14
38PIC	"A"	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.25	52.42	49.60	47.77	45.94	44.11
	"B"	38	36	34	32	30	28	26	24	22	20	18	16	14
	"C"	60.53	59.11	57.70	56.28	54.87	53.45	52.04	50.63	49.21	47.80	46.38	44.97	43.56
	"D"	60.53	59.53	58.53	57.53	56.53	55.53	54.53	53.53	52.53	51.53	50.53	49.53	48.53
		36	34	32	30	28	26	24	22	20	18	16	14	12
36PIC	"A"	72.22	69.40	66.57	63.74	60.91	58.08	55.25	52.42	49.60	46.77	44.94	43.11	42.28
	"B"	36	34	32	30	28	26	24	22	20	18	16	14	12
	"C"	58.11	56.70	55.28	53.87	52.45	51.04	49.63	48.21	46.80	45.38	43.97	42.56	41.14
	"D"	58.11	57.11	56.11	55.11	54.11	53.11	52.11	51.11	50.11	49.11	48.11	47.11	46.11
		34	32	30	28	26	24	22	20	18	16	14	12	10
34PIC	"A"	69.40	66.57	63.74	60.91	58.08	55.25	52.42	49.60	46.77	43.94	42.11	41.28	39.46
	"B"	34	32	30	28	26	24	22	20	18	16	14	12	10
	"C"	55.70	54.28	52.87	51.45	50.04	48.63	47.21	45.80	44.38	42.97	41.56	40.14	38.73
	"D"	55.70	54.70	53.70	52.70	51.70	50.70	49.70	48.70	47.70	46.70	45.70	44.70	43.70
		32	30	28	26	24	22	20	18	16	14	12	10	8
32PIC	"A"	66.57	63.74	60.91	58.08	55.25	52.42	49.60	46.77	43.94	41.11	40.28	38.46	36.63
	"B"	32	30	28	26	24	22	20	18	16	14	12	10	8
	"C"	53.28	51.87	50.45	49.04	47.63	46.21	44.80	43.38	41.97	40.56	39.14	37.73	36.31
	"D"	53.28	52.28	51.28	50.28	49.28	48.28	47.28	46.28	45.28	44.28	43.28	42.28	41.28
		30	28	26	24	22	20	18	16	14	12	10	8	6
30PIC	"A"	63.74	60.91	58.08	55.25	52.42	49.60	46.77	43.94	41.11	39.28	37.46	35.63	34.80
	"B"	30	28	26	24	22	20	18	16	14	12	10	8	6
	"C"	50.87	49.45	48.04	46.63	45.21	43.80	42.38	40.97	39.56	38.14	36.73	35.31	33.90
	"D"	50.87	49.87	48.87	47.87	46.87	45.87	44.87	43.87	42.87	41.87	40.87	39.87	38.87
		28	26	24	22	20	18	16	14	12	10	8	6	
28PIC	"A"	60.91	58.08	55.25	52.42	49.60	46.77	43.94	41.11	38.28	36.46	34.63	33.80	
	"B"	28	26	24	22	20	18	16	14	12	10	8	6	
	"C"	48.45	47.04	45.63	44.21	42.80	41.38	39.97	38.56	37.14	35.73	34.31	32.90	
	"D"	48.45	47.45	46.45	45.45	44.45	43.45	42.45	41.45	40.45	39.45	38.45	37.45	
		26	24	22	20	18	16	14	12	10	8	6		
26PIC	"A"	58.08	55.25	52.42	49.60	46.77	43.94	41.11	38.28	35.46	33.63	32.80		
	"B"	26	24	22	20	18	16	14	12	10	8	6		
	"C"	46.04	44.63	43.21	41.80	40.38	38.97	37.56	36.14	34.73	33.31	31.90		
	"D"	46.04	45.04	44.04	43.04	42.04	41.04	40.04	39.04	30.80	29.80	28.80		
		24	22	20	18	16	14	12	10	8	6			
24PIC	"A"	55.25	52.42	49.60	46.77	43.94	41.11	38.28	35.46	32.63	31.80			
	"B"	24	22	20	18	16	14	12	10	8	6			
	"C"	43.63	42.21	40.80	39.38	37.97	36.56	35.14	33.73	32.31	30.90			
	"D"	43.63	42.63	41.63	40.63	39.63	38.63	37.63	36.63	35.63	34.63			
		22	20	18	16	14	12	10	8	6				
22PIC	"A"	52.42	49.60	46.77	43.94	41.11	38.28	35.46	32.63	30.80				
	"B"	22	20	18	16	14	12	10	8	6				
	"C"	41.21	39.80	38.38	36.97	35.56	34.14	32.73	31.31	29.90				
	"D"	41.21	40.21	39.21	38.21	37.21	36.21	35.21	34.21	33.21				
		20	18	16	14	12	10	8	6					
20PIC	"A"	49.60	46.77	43.94	41.11	38.28	35.46	32.63	29.80					
	"B"	20	18	16	14	12	10	8	6					
	"C"	38.80	37.38	35.97	34.56	33.14	31.73	30.31	28.90					
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80					
		18	16	14	12	10	8	6						
18PIC	"A"	46.77	43.94	41.11	38.28	35.46	32.63	29.80						
	"B"	18	16	14	12	10	8	6						
	"C"	36.38	34.97	33.56	32.14	30.73	29.31	27.90						
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38						
		16	14	12	10	8	6							
16PIC	"A"	43.94	41.11	38.28	35.46	32.63	29.80							
	"B"	16	14	12	10	8	6							
	"C"	33.97	32.56	31.14	29.73	28.31	26.90							
	"D"	33.97	32.97	31.97	30.97	29.97	28.97							
		14	12	10	8	6								
14PIC	"A"	41.11	38.28	35.46	32.63	29.80								
	"B"	14	12	10	8	6								
	"C"	31.56	30.14	28.73	27.31	25.90								
	"D"	31.56	30.56	29.56	28.56	27.56								
		12	10	8	6									
12PIC	"A"	38.28	35.46	32.63	29.80									
	"B"	12	10	8	6									
	"C"	29.14	27.73	26.31	24.90									
	"D"	29.14	28.14	27.14	26.14									
		10	8	6										
10PIC	"A"	35.46	32.63	29.80										
	"B"	10	8	6										
	"C"	26.73	25.31	23.90										
	"D"	26.73	25.73	24.73										
		8	6											
8PIC	"A"	32.63	29.80											
	"B"	8	6											
	"C"	24.31	22.90											
	"D"	24.31	23.31											
		6												
6PIC	"A"	29.80												
	"B"	6												
	"C"	21.90												
	"D"	21.90												



4G 45MT & DL TABLE IN INCHES

45MT DIMENSIONAL DATA

BODY I.D.		TAP I.D.												
		48	46	44	42	40	38	36	34	32	30	28	26	24
48PIC	"A"	2265	2194	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1429
	"B"	1219	1168	1118	1067	1016	965	914	864	813	762	711	660	610
	"C"	1844	1808	1772	1736	1700	1664	1628	1593	1557	1521	1485	1449	1413
	"D"	1844	1819	1793	1768	1742	1717	1692	1666	1641	1615	1590	1565	1539
		46	44	42	40	38	36	34	32	30	28	26	24	22
46PIC	"A"	2194	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1382
	"B"	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559
	"C"	1783	1747	1711	1675	1639	1603	1567	1531	1495	1459	1423	1387	1352
	"D"	1783	1757	1732	1706	1681	1656	1630	1605	1579	1554	1529	1503	1478
		44	42	40	38	36	34	32	30	28	26	24	22	20
44PIC	"A"	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1357	1311
	"B"	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
	"C"	1721	1685	1649	1614	1578	1542	1506	1470	1434	1398	1362	1326	1290
	"D"	1721	1696	1671	1645	1620	1594	1569	1544	1518	1493	1467	1442	1417
		42	40	38	36	34	32	30	28	26	24	22	20	18
42PIC	"A"	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1332	1285	1264
	"B"	1067	1016	965	914	864	813	762	711	660	610	559	508	457
	"C"	1660	1624	1588	1552	1516	1480	1444	1409	1373	1337	1301	1265	1229
	"D"	1660	1635	1609	1584	1558	1533	1508	1482	1457	1431	1406	1381	1355
		40	38	36	34	32	30	28	26	24	22	20	18	16
40PIC	"A"	1978	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1239	1192
	"B"	1016	965	914	864	813	762	711	660	610	559	508	457	406
	"C"	1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1239	1204	1168
	"D"	1599	1573	1548	1522	1497	1472	1446	1421	1395	1370	1345	1319	1294
		38	36	34	32	30	28	26	24	22	20	18	16	14
38PIC	"A"	1906	1834	1763	1691	1619	1547	1475	1403	1332	1260	1213	1167	1120
	"B"	965	914	864	813	762	711	660	610	559	508	457	406	356
	"C"	1537	1501	1466	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106
	"D"	1537	1512	1487	1461	1436	1410	1385	1360	1334	1309	1283	1258	1233
		36	34	32	30	28	26	24	22	20	18	16	14	12
36PIC	"A"	1834	1763	1691	1619	1547	1475	1403	1332	1260	1188	1141	1095	1074
	"B"	914	864	813	762	711	660	610	559	508	457	406	356	305
	"C"	1476	1440	1404	1368	1332	1296	1260	1225	1189	1153	1117	1081	1045
	"D"	1476	1451	1425	1400	1374	1349	1324	1298	1273	1247	1222	1197	1171
		34	32	30	28	26	24	22	20	18	16	14	12	10
34PIC	"A"	1763	1691	1619	1547	1475	1403	1332	1260	1188	1116	1070	1049	1002
	"B"	864	813	762	711	660	610	559	508	457	406	356	305	254
	"C"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091	1055	1020	984
	"D"	1415	1389	1364	1339	1313	1288	1262	1237	1212	1186	1161	1135	1110
		32	30	28	26	24	22	20	18	16	14	12	10	8
32PIC	"A"	1691	1619	1547	1475	1403	1332	1260	1188	1116	1044	1023	977	930
	"B"	813	762	711	660	610	559	508	457	406	356	305	254	203
	"C"	1353	1317	1282	1246	1210	1174	1138	1102	1066	1030	994	958	922
	"D"	1353	1328	1303	1277	1252	1226	1201	1176	1150	1125	1099	1074	1049
		30	28	26	24	22	20	18	16	14	12	10	8	6
30PIC	"A"	1619	1547	1475	1403	1332	1260	1188	1116	1044	998	951	905	884
	"B"	762	711	660	610	559	508	457	406	356	305	254	203	152
	"C"	1292	1256	1220	1184	1148	1112	1077	1041	1005	969	933	897	861
	"D"	1292	1267	1241	1216	1190	1165	1140	1114	1089	1063	1038	1013	987
		28	26	24	22	20	18	16	14	12	10	8	6	
28PIC	"A"	1547	1475	1403	1332	1260	1188	1116	1044	972	926	880	858	
	"B"	711	660	610	559	508	457	406	356	305	254	203	152	
	"C"	1231	1195	1159	1123	1087	1051	1015	979	943	907	872	836	
	"D"	1231	1205	1180	1155	1129	1104	1078	1053	1028	1002	977	951	
		26	24	22	20	18	16	14	12	10	8	6		
26PIC	"A"	1475	1403	1332	1260	1188	1116	1044	972	901	854	833		
	"B"	660	610	559	508	457	406	356	305	254	203	152		
	"C"	1169	1133	1098	1062	1026	990	954	918	882	846	810		
	"D"	1169	1144	1119	1093	1068	1042	1017	992	782	757	731		
		24	22	20	18	16	14	12	10	8	6			
24PIC	"A"	1403	1332	1260	1188	1116	1044	972	901	829	808			
	"B"	610	559	508	457	406	356	305	254	203	152			
	"C"	1108	1072	1036	1000	964	928	893	857	821	785			
	"D"	1108	1083	1057	1032	1006	981	956	930	905	879			
		22	20	18	16	14	12	10	8	6				
22PIC	"A"	1332	1260	1188	1116	1044	972	901	829	782				
	"B"	559	508	457	406	356	305	254	203	152				
	"C"	1047	1011	975	939	903	867	831	795	759				
	"D"	1047	1021	996	971	945	920	894	869	844				
		20	18	16	14	12	10	8	6					
20PIC	"A"	1260	1188	1116	1044	972	901	829	757					
	"B"	508	457	406	356	305	254	203	152					
	"C"	985	950	914	878	842	806	770	734					
	"D"	985	960	935	909	884	858	833	808					
		18	16	14	12	10	8	6						
18PIC	"A"	1188	1116	1044	972	901	829	757						
	"B"	457	406	356	305	254	203	152						
	"C"	924	888	852	816	780	745	709						
	"D"	924	899	873	848	823	797	772						
		16	14	12	10	8	6							
16PIC	"A"	1116	1044	972	901	829	757							
	"B"	406	356	305	254	203	152							
	"C"	863	827	791	755	719	683							
	"D"	863	837	812	787	761	736							
		14	12	10	8	6								
14PIC	"A"	1044	972	901	829	757								
	"B"	356	305	254	203	152								
	"C"	801	766	730	694	658								
	"D"	801	776	751	725	700								
		12	10	8	6									
12PIC	"A"	972	901	829	757									
	"B"	305	254	203	152									
	"C"	740	704	668	632									
	"D"	740	715	689	664									
		10	8	6										
10PIC	"A"	901	829	757										
	"B"	254	203	152										
	"C"	679	643	607										
	"D"	679	653	628										
		8	6											
8PIC	"A"	829	757											
	"B"	203	152											
	"C"	618	582											
	"D"	618	592											
		6												
6PIC	"A"	757												
	"B"	152												
	"C"	556												
	"D"	556												



4G 45MT & DL TABLE IN METRIC

JOINT ASSEMBLY

1. Apply continuous bead of sealant 1/4" wide to one flange.
2. Join to next section.
3. Fill the Flange Vee Band with sealant and install around Flanges.
4. Gently tap Vee Band with a soft head mallet while tightening band to assure tight seal.
5. Insert insulation (IPIC-1, -2, -3, -4) between pipe sections
6. Install casing closure band. (Seal if external to structure to prevent moisture infiltration).

DESIGN CHECKLIST

In order to quickly and accurately design a Grease Duct system, Metal-Fab's Engineering Department needs basic information about the system. Supplying the following data will speed the design process:

1. Determine if it is a Type I (Grease) or Type II (Heat and non-flammable vapors).
2. Provide CFM flow rate for each hood connection.
3. Advise available height above hood for ductwork.
4. What are hood outlet dimensions?
5. Supply a line drawing to reflect desired system layout.
6. Provide termination information. (Vertical / Horizontal, Roof Curb dimensions, etc.)
7. Will the ductwork penetrate combustible materials and/or fire-rated partitions?
8. Identify any obstructions and / or restrictions that will affect system design and supports.
9. Provide basic fan information (Upblast / Inline / Utility set).

Receipt of this information will speed the design process.
Thank you.

WARRANTY

LIMITED LIFETIME WARRANTY

Metal-Fab Inc. warrants to owners of its Models PSW, PIC, 1G, 2G, 3G, and 4G grease duct systems that they are free from defects in material and workmanship in normal use for as long as the original consumer owns the grease duct system, provided the system has been designed, installed, maintained and used in accordance with Metal-Fab, Inc. specifications. Metal-Fab, Inc. further warrants any portion of such system repaired or replaced under this limited warranty for the remainder of the original warranty period.

Refer to Metal-Fab Warranty form L2157 for complete information on claim procedures, exclusions and limitations. Available on line at www.greaseduct.com and www.metal-fabcommercial.com

www.greaseduct.com

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Form No. L2084-06/13

CONKLIN
METAL INDUSTRIES
FOUNDED 1874

Material Specification Sheet
Galvanized Steel

Description

Hot-dipped galvanized commercial steel is carbon steel sheet coated with zinc on two sides by the continuous hot-dipped process. This process results in a layer of zinc on each side of the steel sheet that is tightly adhering to the steel thru the formation of an iron-zinc alloy bonding layer that is formed by a diffusion process while the heated steel strip is in contact with the molten zinc. Hot-dipped galvanized steel is one of the most economical corrosion resistant sheet materials available. It is excellent for all applications where optimum galvanic protection from corrosion is required. Additionally, galvanized steel lends itself to most fabrication processes. It can be roll-formed, brake-formed or lock-seamed. It can be joined by various methods including riveting, soldering, welding and spot welding. Galvanized steel is available in numerous metallurgical grades providing different degrees of formability and strength to the base sheet. The designation for the basic galvanized product is commercial steel (CS). This product is useful for many applications requiring the strength of steel combined with the workability needed for bending and moderate forming; it provides the strength and formability levels that most users need for general purpose applications.

Mechanical Properties

Typical mechanical properties for hot-dipped galvanized commercial steel are listed below.

- Yield Strength: 48 ksi
- Tensile Strength: 59 ksi
- Elongation: 28%
- Hardness: 62 RB

ASTM Specifications

ASTM Designation A924 outlines the general requirements for carbon steel sheet metal coated by the hot-dipped process. A924 designates tolerances for thickness, width, camber, shape, etc.

ASTM Designation A653 outlines the general requirements for the hot-dipped coated galvanized steel. Included in this specification are steel chemistry requirements and typical mechanical properties of the various metallurgical grades. ASTM A653 also includes the coating weight requirements for the different coating designations.

Coating Thickness

Coating thickness is measured as the coating weight in ounces per square foot. For example the coating designation G-90 specifies there is a minimum coating weight of .90 ounces per square foot on both sides of the sheet. For more information on zinc coatings visit http://www.galvinfo.com/ginotes/GalvInfoNote_1_6.pdf

Surface Treatment

The "chem-treat dry" surface treatment consists of an application of a thin, invisible, corrosion inhibiting, inorganic, chemical film on the zinc surface. This film is applied at the galvanizing line by dipping into an aqueous solution of corrosion inhibiting chemicals. The chemically treated surface is much more resistant to "white rust" - the corrosion of zinc that typically occurs in humid conditions during storage or transportation.

Source: US Steel

“If it doesn’t say ‘AirTite’; it isn’t”.

HETDQ

High Efficiency Take-off w/ Damper & Raised Quad

26 Gauge 1” Gasket and Flange

Available in 24 Gauge

SIZE	04"	05"	06"	07"	08"	09"	10"	12"	14"	16"
SIZE	6 x 8	6 x 10	6 x 10	8 x 12	8 x 12	8 x 12	10 x 14	12 x 16	14 x 18	16 x 20
QTY	30	30	30	16	16	16	8	5	4	3
WGT	71	78	81	41	41	41	24	21	19	26

The ductwork design should be something in which the engineer, contractor, and owner can take great pride. Always using the top quality materials, the best grade of steel in the proper gauges, forming the product with the state of the art manufacturing processes, and the gasket material to meet the highest of industry standards has made the products of **AirTite, Inc.** stand out as the finest ductwork take-offs in the HVAC industry.

AirTite, Inc. has always striven to meet the industries best standards. Complying with SMACNA, ADI, and other required standards of the HVAC industry.

Applying these easy to use fittings has made them very popular with the contractors that have had the opportunity to incorporate these fittings into their duct systems. Cutting into the ductwork at an ideal or specific location the contractors find these take-off fittings more adaptable because the mastic or glue on the gasket adheres readily and firmly holds the fitting in place for the technician to securely fasten the take-off fittings to the ductwork.

The **HETDQ** is used primarily where the duct sizing and the building structure has made it necessary to assure that the branch line of the duct has a sufficient quantity of air flow to accomplish the required amount of air volume. The polyethylene cross-linked fire retardant gasket enhances the seal between the take-off and the duct to insure **NO** air loss without extensive caulking and use of mastics.

Commercial Air Tite Take-off

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