

FACTORY-BUILT GREASE DUCT SYSTEMS



For Kitchen Ventilation Systems



Making The Right Choice For Your Client




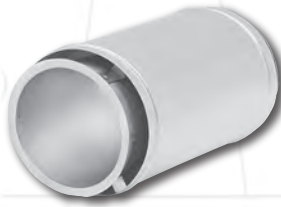
DESCRIPTION	METAL-FAB "G".SERIES		
	Models 3G / 4G ALTERNATE TO FIRE RESISTIVE SHAFT ENCLOSURE Factory - Built	Models PIC / 1G / 2G REDUCED CLEARANCE TO COMBUSTIBLES Factory - Built	Models PSW SINGLE WALL STAINLESS STEEL Factory - Built
			
INSTALLED SPACE REQUIREMENTS 12" X 12" SQUARE DUCTS - 144 SQ. IN. 14" ROUND DUCT - 154 SQ. IN.	20" X 20"	20"/22" X 20"/22"	50" X 50"
CONSTRUCTION	Outer Casing (Integral Shaft Enclosure) Aluminized Carbon or Stainless Steel Insulation: 3" or 4" Ceramic Fiber Grease Duct - 20 Gauge Stainless Steel	Outer Casing - Aluminized Carbon or Stainless Steel Insulation: Air, 1" or 2" Ceramic Fiber Grease Duct - 20 Gauge Stainless Steel	Grease Duct - 20 Gauge Stainless Steel
CLEARANCES	Zero Clearance to Combustibles Zero Clearance to Limited Combustibles	See Chart for Reduced Clearances on Page 8	18 Inches to Combustibles 3 Inches to Limited Combustibles
CURRENT CODE ACCEPTANCE	YES 2015 IMC 2015 UMC 2017 NFPA96 New York City: MEA-86-07-E Los Angeles: RR-8441 Wisconsin: 990074-H	YES 2015 IMC 2015 UMC 2017 NFPA96 New York City: MEA-245-97-M	YES 2015 IMC 2015 UMC 2017 NFPA96
APPLICABLE LISTINGS	UL1978 - Standard for Grease Ducts UL2221 - Tests of Fire Resistive Duct Enclosures UL103HT 6"-14" Diameters ASTM E 814 - Standard Test Method for Through Penetration Firestops ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction UL Evaluation Report UL ER 15388-01 Acceptance Criteria for Grease Duct Systems, Self Enclosed	UL1978 - Standard for Grease Ducts UL2221 - Condition B, 2G Product Only, for 6"-18" Diameters UL103HT - 2G Product Only, for 6"-14" Diameters	UL1978 - Standard for Grease Ducts NFPA96 - Requires duct and fire wrap to be listed together as an assembly for the intended application. Must be installed per the manufacturer's listing and their installation instructions.
INSTALLED COSTS	\$\$\$	\$\$	\$
WARRANTY	LIMITED LIFETIME	LIMITED LIFETIME	LIMITED LIFETIME

CHART FOR REDUCED CLEARANCES



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



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"



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



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



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



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

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MODEL CODES

ICC/IMC: International Code Council/International Mechanical Code

The ICC/IMC are not-for-profit organizations 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
UL 1978	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 103HT	Standard For Safety, Factory-Built Chimneys for Residential and Building Heating Appliances. Solid Fuel 2100°F, high temp appliances.
ASTM E119	Standard Test Methods for Fire Tests for Building Construction and Materials
ASTME814	Standard Test Method for Through-Penetration Fire Stops
AC121	ICC-ES Acceptance Criteria For Grease Duct Systems, Self-Enclosed
UL-ER	Evaluation Report No. ER15388-01*

* 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: cvpcs@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 parentheses 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	PIC	PSW	1G (IPIC-1)	2G (IPIC-2)	3G (IPIC-3)	4G (IPIC-4)
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					2 Hr.	3 Hr.
UL 2221				2 Hr.*	2 Hr.	2 Hr.
ASTM E 119-Fire Engulfment					2 Hr.	3 Hr.
ASTM E 119-Fire Resistance						2 Hr.
ASTM E814-Fire Stop F&T				3 Hr.*	3 Hr.	3 Hr.
ICBO AC121						X
ICBO ER 5301 / UL ER15388-01						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

*Fire rated under UL 2221-Condition B, for diameters through 18". Reference UL Evaluation Report #ER15388-01 (P.11, Section 7.4).

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°C)
Intermittent	2000°F (1084°C)

MATERIAL THICKNESS							
Flue	PSW	PIC	1G	2G	3G	4G	
6"-36" (152-914)	.035"(.9)	.035"(.9)	.035"(.9)	.035"(.9)	.035"(.9)	.035"(.9)	
38"-48" (965-1219)	.048" (1.2)	.048" (1.2)	.048" (1.2)	.048" (1.2)	N/A	.048" (1.2)	
Casing – Based on Flue Diameter – *Aluminized / Stainless							
6"-18" (152-457)	Not Applicable	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	
20"-22" (508-559)		*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)
24" (610)		*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.024"(.6) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)
26"-30" (660-762)		*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)
32" (813)		*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .035"(.9)
34" (864)		*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)
36" (914)		*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .024"(.6)	*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)
38"-48" (965-1219)		*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)	*.034"(.9) / .035"(.9)	N/A	*.034"(.9) / .035"(.9)

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

CASING TEMPERATURE CHART						
500° F Operating Temperature						
Temperature Rise Degrees Above Ambient						
Flue Diameter	PSW	PIC	1G	2G	3G	4G
6" (152)	N/A	252°F	102°F	64°F	30°F	30°F
12" (305)	N/A	252°F	109°F	70°F	38°F	38°F
18" (457)	N/A	252°F	114°F	75°F	43°F	43°F
24" (610)	N/A	252°F	118°F	78°F	49°F	49°F
30" (762)	N/A	252°F	121°F	83°F	58°F	58°F
36" (914)	N/A	252°F	126°F	87°F	64°F	64°F
(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: The organization, office, or individual responsible for approving equipment, an installation, or 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: Material subject to an increase in combustibility or flame spread rating beyond the limits established in the definition of limited combustibles.

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 - NFPA (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.

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

CHART FOR REDUCED 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					
	PSW	PIC	1G	2G	3G	4G
6" (152)	18" (457)	5" (127)	2" (51)	1" (25)	0"	0"
8" (203)	18" (457)	5" (127)	3" (76)	1" (25)	0"	0"
10" (254)	18" (457)	5" (127)	3" (76)	1" (25)	0"	0"
12" (305)	18" (457)	7" (178)	3" (76)	1" (25)	0"	0"
14" (356)	18" (457)	9" (229)	3" (76)	1" (25)	0"	0"
16" (406)	18" (457)	10" (254)	3" (76)	1" (25)	0"	0"
18" (457)	18" (457)	12" (305)	3" (76)	1" (25)	0"	0"
20" (508)	18" (457)	14" (356)	4" (102)	2" (51)	0"	0"
22"-24" (559-610)	18" (457)	18" (457)	4" (102)	2" (51)	0"	0"
26"-32" (660-813)	18" (457)	18" (457)	4" (102)	2" (51)	0"	0"
34"-36" (864-914)	18" (457)	18" (457)	5" (127)	3" (76)	0"	0"
38" (965)	18" (457)	18" (457)	5" (127)	3" (76)	N/A	0"
40"-42" (1016-1067)	18" (457)	18" (457)	5" (127)	3" (76)	N/A	1" (25)
44"-48" (1118-1219)	18" (457)	18" (457)	6" (152)	4" (102)	N/A	1" (25)

Clearance to Non-Combustibles: 0", all products

DESIGN CONSIDERATIONS

NFPA 96: Requires provisions for the inspection of, and access for, cleaning of grease ducts. Openings are to be located on the top or side of the duct at changes or 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.

DESIGN CONSIDERATIONS (CONTINUED)

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.

SUPPORT DATA

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

Values shown are the maximum distance between supports. Guides are also required.

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

GUIDES- VERTICAL		Maximum Spacing VERTICAL/OUTSIDE - Adjacent to Structure				
(See Components Section for guide selection)						
Flue Diameter - Inches	PSW	PIC	1G	2G	3G	4G
6" (152)	17' (5.2m)	17' (5.2m)	17' (5.2m)	10' 6" (3.2m)	8' 3" (2.5m)	8' 3" (2.5m)
8" (203)	17' 6" (5.3m)	17' 6" (5.3m)	17' 6" (5.3m)	12' (3.7m)	9' 7" (2.9m)	9' 7" (2.9m)
10" (254)	18' 6" (5.6m)	18' 6" (5.6m)	18' 6" (5.6m)	13' 3" (4.0m)	10' 9" (3.3m)	10' 9" (3.3m)
12" (305)	20' (6.1m)	20' (6.1m)	20' (6.1m)	14' 6" (4.4m)	11' 11" (3.6m)	11' 11" (3.6m)
14" (356)	21' (6.4m)	21' (6.4m)	21' (6.4m)	15' 11" (4.8m)	13' 2" (4.0m)	13' 2" (4.0m)
16" (406)	22' (6.7m)	22' (6.7m)	22' (6.7m)	17' (5.2m)	14' 2" (4.3m)	14' 2" (4.3m)
18" (457)	23' (7.0m)	23' (7.0m)	23' (7.0m)	18' 3" (5.6m)	15' 4" (4.7m)	15' 4" (4.7m)
20" (508)	24' (7.3m)	24' (7.3m)	24' (7.3m)	19' 6" (5.9m)	16' 4" (5.0m)	16' 4" (5.0m)
22" (559)	24' 6" (7.5m)	24' 6" (7.5m)	24' 6" (7.5m)	20' 2" (6.2m)	17' (5.2m)	17' (5.2m)
24" (610)	25' (7.6m)	25' (7.6m)	25' (7.6m)	20' 9" (6.3m)	17' 7" (5.4m)	17' 7" (5.4m)
26" (660)	26' (7.9m)	26' (7.9m)	26' (7.9m)	21' 5" (6.5m)	18' 2" (5.5m)	18' 2" (5.5m)
28" (711)	27' (8.2m)	27' (8.2m)	27' (8.2m)	22' 1" (6.9m)	18' 9" (5.7m)	18' 9" (5.7m)
30" (762)	27' (8.2m)	27' (8.2m)	27' (8.2m)	22' 8" (7.1m)	19' 4" (5.9m)	19' 4" (5.9m)
32" (813)	28' 6" (8.7m)	28' 6" (8.7m)	28' 6" (8.7m)	23' 4" (7.3m)	19' 11" (6.0m)	19' 11" (6.1m)
34" (864)	29' (8.8m)	29' (8.8m)	29' (8.8m)	24' (7.3m)	20' 6" (6.2m)	20' 6" (6.2m)
36" (914)	30' (9.1m)	30' (9.1m)	30' (9.1m)	24' 7" (7.5m)	21' (6.4m)	21' (6.4m)
38" (965)	30' 6" (9.3m)	30' 6" (9.3m)	30' 6" (9.3m)	24' 7" (7.5m)	N/A	21' (6.4m)
40" (1016)	31' (9.4m)	31' (9.4m)	31' (9.4m)	24' 7" (7.5m)	N/A	21' (6.4m)
42" (1067)	32' (9.8m)	32' (9.8m)	32' (9.8m)	24' 7" (7.5m)	N/A	21' (6.4m)
44" (1118)	32' 6" (9.9m)	32' 6" (9.9m)	32' 6" (9.9m)	24' 7" (7.5m)	N/A	21' (6.4m)
46" (1168)	33' 6" (10.2m)	33' 6" (10.2m)	33' 6" (10.2m)	24' 7" (7.5m)	N/A	21' (6.4m)
48" (1219)	34' 6" (10.5m)	34' 6" (10.5m)	34' 6" (10.5m)	24' 7" (7.5m)	N/A	21' (6.4m)

GUIDES - VERTICAL		Max. Vertical Spacing-VERTICAL/INTERNAL				
Below Roofline						
(See Components section for guide selection)						
PRODUCT	PSW	PIC	1G	2G	3G	4G
All Dia. Full Angle Ring (FAR)	25' (7.6m)	25' (7.6m)	21' (6.4m)	19' (5.8m)	18' (5.5m)	18' (5.5m)

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

WEIGHT/LIFT INFORMATION

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

$$\text{Weight (lbs. per lineal foot)} = (\text{Pipe Dia. in inches}) \times \text{"Weight Factor"}$$

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.

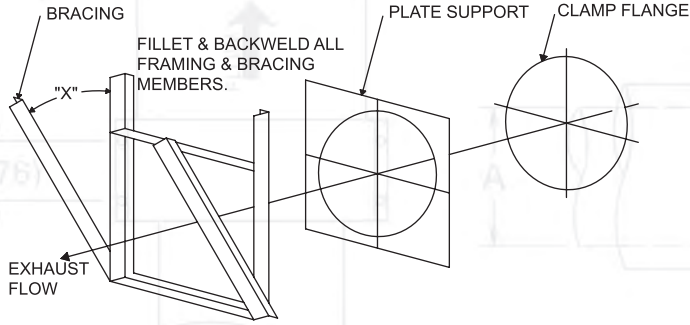
STACK LIFT CHART

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

	PSW	PIC	1G	2G	3G	4G
PIPE DIA.	Height	Height	Height	Height	Height	Height
6" (152)	220' (67.1m)	110' (33.5m)	90' (27.4m)	80' (24.4m)	60' (18.3m)	60' (18.3m)
8" (203)	190' (57.9m)	90' (27.4m)	80' (24.4m)	70' (21.3m)	50' (15.2m)	50' (15.2m)
10" (254)	170' (51.8m)	80' (24.4m)	70' (21.3m)	60' (18.3m)	40' (12.2m)	40' (12.2m)
12" (305)	150' (45.7m)	80' (24.4m)	70' (21.3m)	60' (18.3m)	40' (12.2m)	40' (12.2m)
14" (356)	140' (42.7m)	70' (21.3m)	60' (18.3m)	50' (15.2m)	40' (12.2m)	40' (12.2m)
16" (406)	130' (39.6m)	70' (21.3m)	60' (18.3m)	50' (15.2m)	40' (12.2m)	40' (12.2m)
18" (457)	120' (36.6m)	60' (18.3m)	50' (15.2m)	50' (15.2m)	40' (12.2m)	40' (12.2m)
20" (508)	110' (33.5m)	60' (18.3m)	50' (15.2m)	40' (12.2m)	30' (9.1m)	30' (9.1m)
22" (559)	110' (33.5m)	50' (15.2m)	40' (12.2m)	40' (12.2m)	30' (9.1m)	30' (9.1m)
24" (610)	100' (30.5m)	50' (15.2m)	40' (12.2m)	40' (12.2m)	30' (9.1m)	30' (9.1m)
26" (660)	90' (27.4m)	50' (15.2m)	40' (12.2m)	40' (12.2m)	30' (9.1m)	30' (9.1m)
28" (711)	90' (27.4m)	40' (12.2m)	40' (12.2m)	30' (9.1m)	20' (6.1m)	20' (6.1m)
30" (762)	80' (24.4m)	40' (12.2m)	40' (12.2m)	30' (9.1m)	20' (6.1m)	20' (6.1m)
32" (813)	80' (24.4m)	40' (12.2m)	30' (9.1m)	30' (9.1m)	20' (6.1m)	20' (6.1m)
34" (864)	70' (21.3m)	40' (12.2m)	30' (9.1m)	20' (6.1m)	20' (6.1m)	20' (6.1m)
36" (914)	70' (21.3m)	30' (9.1m)	30' (9.1m)	20' (6.1m)	15' (4.6m)	15' (4.6m)
38" (965)	60' (18.3m)	30' (9.1m)	20' (6.1m)	20' (6.1m)	N/A	15' (4.6m)
40" (1016)	60' (18.3m)	30' (9.1m)	20' (6.1m)	20' (6.1m)	N/A	15' (4.6m)
42" (1067)	60' (18.3m)	30' (9.1m)	20' (6.1m)	20' (6.1m)	N/A	15' (4.6m)
44" (1118)	60' (18.3m)	30' (9.1m)	20' (6.1m)	20' (6.1m)	N/A	15' (4.6m)
46" (1168)	50' (15.2m)	20' (6.1m)	20' (6.1m)	20' (6.1m)	N/A	10' (3.0m)
48" (1219)	50' (15.2m)	20' (6.1m)	20' (6.1m)	20' (6.1m)	N/A	10' (3.0m)

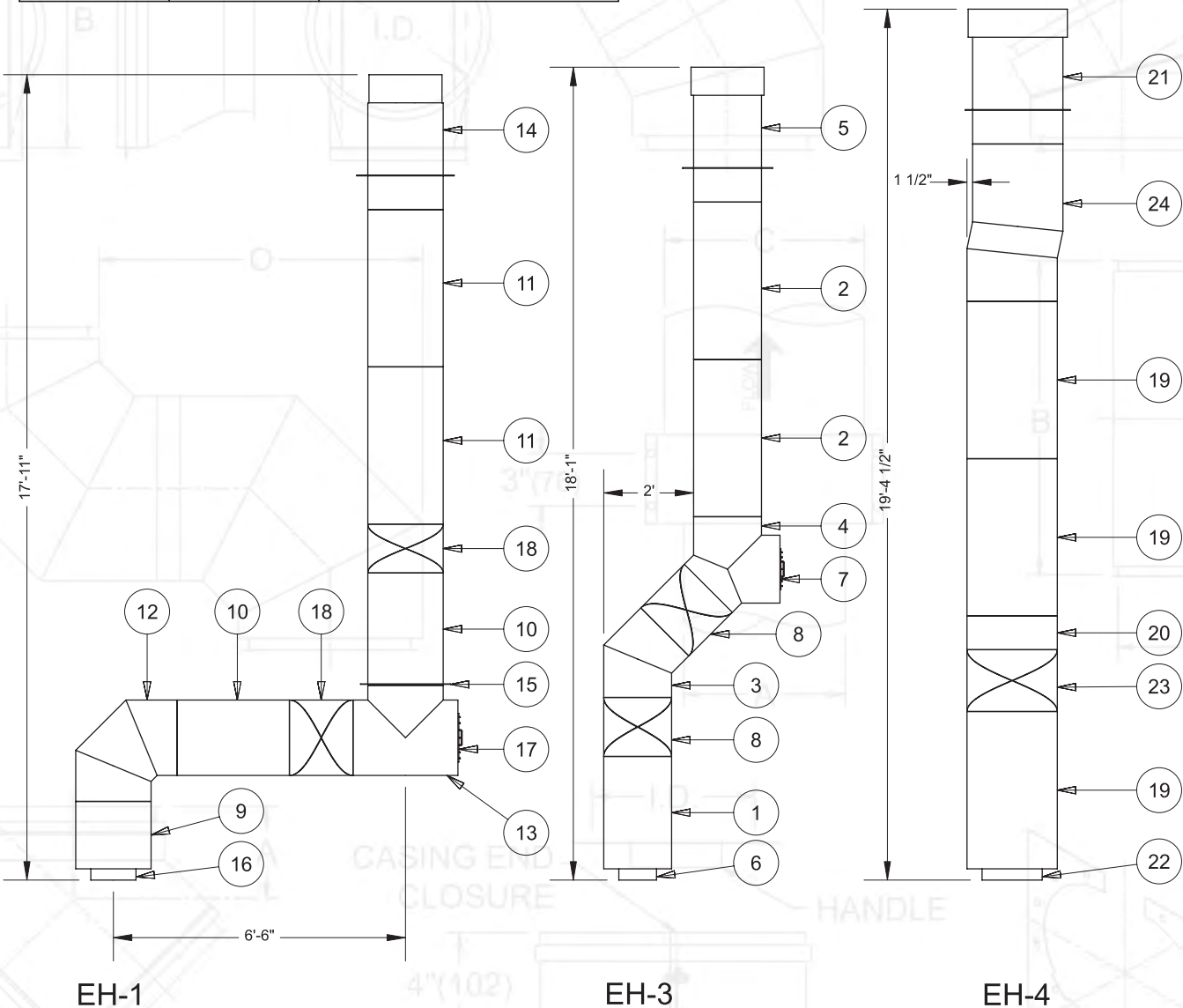
METAL-FAB GENERATED CAD

SUGGESTED BRACING FOR PLATE SUPPORT BY OTHERS.

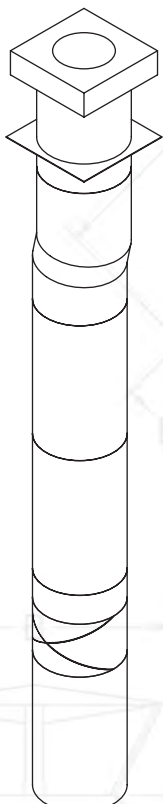
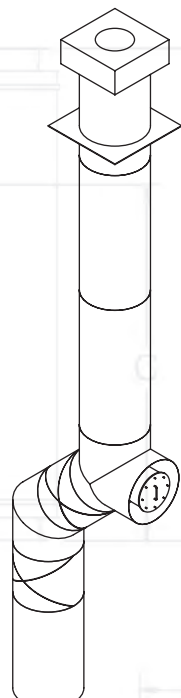
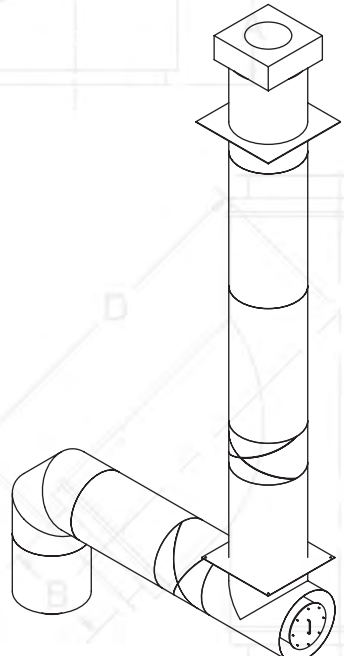


"X" IS A MIN. OF 30 DEG. WHEN BRACING IS USED. A WELDED FRAME MUST BE ADEQUATELY ATTACHED TO STRUCTURAL MEMBER FOR FRAMEWORK RIGIDITY, IF BRACING ISN'T USED.

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")	



INCLUDES BILL OF MATERIALS & ISOMETRIC ILLUSTRATIONS



Parts List				
ITEM #	QTY	PART NUMBER	CTO	DESCRIPTION
1	1	10PIC30-4	4A3	PIPE LENGTH
2	2	10PIC42-4	4A3	PIPE LENGTH
3	1	10PIC45L-4	4A3	45 DEG ELBOW
4	1	10PIC90Y-4	4A3	90 DEG WYE
5	1	10PICFCT195	4A3	FAN CURB TERMINATION
6	1	10PICRHCK-4	4A3	ROUND HOOD COLLAR KIT
7	1	10PICTAP-4	4A3	TOOLESS ACCESS PANEL
8	2	10PICVL-4	4A3	VARIABLE LENGTH
9	1	12PIC18-4	4A3	PIPE LENGTH
10	2	12PIC30-4	4A3	PIPE LENGTH
11	2	12PIC42-4	4A3	PIPE LENGTH
12	1	12PIC90L-4	4A3	90 DEG ELBOW
13	1	12PIC90MT-4	4A3	90 DEG MANIFOLD TEE
14	1	12PICFCT195	4A3	FAN CURB TERMINATION
15	1	12PICPS-4	4A3	PLATE SUPPORT
16	1	12PICRHCK-4	4A3	ROUND HOOD COLLAR KIT
17	1	12PICTAP-4	4A3	TOOLESS ACCESS PANEL
18	2	12PICVL-4	4A3	VARIABLE LENGTH
19	3	16PIC42-4	4A3	PIPE LENGTH
20	1	16PIC9-4	4A3	PIPE LENGTH
21	1	16PICFCT265	4A3	FAN CURB TERMINATION
22	1	16PICRHCK-4	4A3	ROUND HOOD COLLAR KIT
23	1	16PICVL-4	4A3	VARIABLE LENGTH
24	1	16PICVOK-4	4A3	VARIABLE OFFSET KIT
	7	P080	4A3	GREASE DUCT SEALANT

NOTES:

1. MATERIALS: (CTO: 4A3) 304 S.S INNER/ ALUMINIZED OUTER/ 3" 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 SPECIFYING ENGINEER OR END USER TO ASSURE COMPLIANCE WITH LOCAL CODES.

JOB: GREASE DUCT			
DATE: 11/2/2017	SHEET SIZE: B	DRAWN BY: JONH	DRAWING NUMBER: S842C4N52
REVISION:		METAL-FAB INC.	
SHEET:			

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 (Flue Material)	Second Position (Casing Material)	Third Position (Insulation)
3 = 430 Stainless Steel	A = Aluminized Steel	0 = 1" Airspace
4 = 304 Stainless Steel	4 = 304 Stainless Steel	1 = 1" Ceramic
6 = 316 Stainless Steel	6 = 316 Stainless Steel	2 = 2" Ceramic
		3 = 3" Ceramic
		4 = 4" Ceramic

PIPE LENGTHS

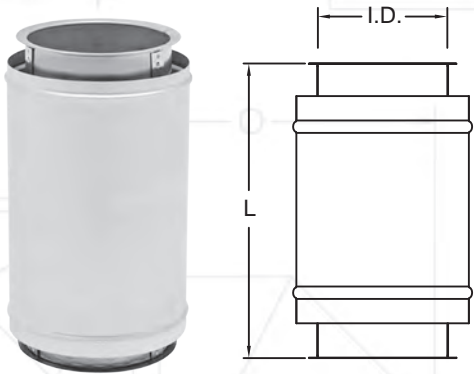
- 9" (229)
- 18" (457)
- 30" (762)
- 42" (1067)

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

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

L = pipe length (feet)

I.D. = pipe diameter (inches)



NOTE: Custom lengths available, please contact factory.

PIPE I.D.	PIPE O.D.			
	PSW	PIC / 1G	2G	3G
6" (152)	8" (203)	10" (254)	12" (305)	14" (356)
8" (203)	10" (254)	12" (305)	14" (356)	16" (406)
10" (254)	12" (305)	14" (356)	16" (406)	18" (457)
12" (305)	14" (356)	16" (406)	18" (457)	20" (508)
14" (356)	16" (406)	18" (457)	20" (508)	22" (559)
16" (406)	18" (457)	20" (508)	22" (559)	24" (610)
18" (457)	20" (508)	22" (559)	24" (610)	26" (660)
20" (508)	22" (559)	24" (610)	26" (660)	28" (711)
22" (559)	24" (610)	26" (660)	28" (711)	30" (762)
24" (610)	26" (660)	28" (711)	30" (762)	32" (813)
26" (660)	28" (711)	30" (762)	32" (813)	34" (864)
28" (711)	30" (762)	32" (813)	34" (864)	36" (914)
30" (762)	32" (813)	34" (864)	36" (914)	38" (965)
32" (813)	34" (864)	36" (914)	38" (965)	40" (1016)
34" (864)	36" (914)	38" (965)	40" (1016)	42" (1067)
36" (914)	38" (965)	40" (1016)	42" (1067)	44" (1118)
38" (965)	40" (1016)	42" (1067)	N/A	46" (1168)
40" (1016)	42" (1067)	44" (1118)	N/A	48" (1219)
42" (1067)	44" (1118)	46" (1168)	N/A	50" (1270)
44" (1118)	46" (1168)	48" (1219)	N/A	52" (1321)
46" (1168)	48" (1219)	50" (1270)	N/A	54" (1372)
48" (1219)	50" (1270)	52" (1321)	N/A	56" (1422)

ADJUSTABLE LENGTH EXPANSION JOINT (AL)

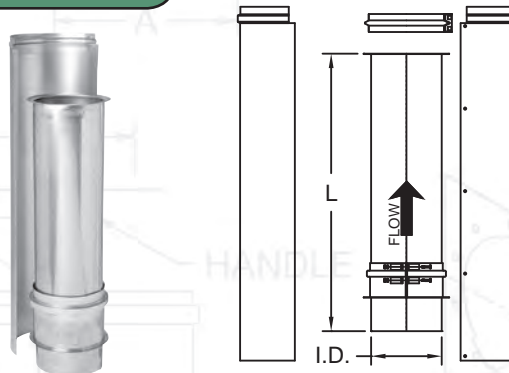
Flow Resistance $K = .4 \left(\frac{L}{I.D.} \right)$

L = pipe length (feet)

Field adjusted to fill gaps between standard length components and compensates for thermal expansion or contraction between two fixed points.

INSTALLED LENGTH

- Minimum: 5.5"
- Maximum: 22"



COMPONENTS

VARIABLE LENGTH (VL)

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

L = pipe length (feet)

I.D. = flue diameter (inches)

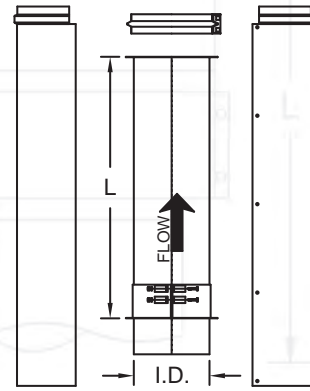
Fills gaps between standard length components.

INSTALLED LENGTH

Minimum: 4"

Maximum: 26"

NOTE: Does not allow for thermal expansion



TAPERED INCREASER (TI)

6" - 36" Diameters

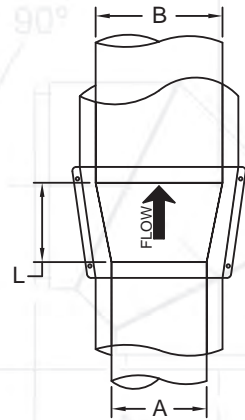
Flow Resistance $K = .51 \frac{[1 - (\frac{A}{B})^2]^2}{(\frac{A}{B})^4}$

Tapered increasers are preferred over step increasers when space permits. Refer to the table below to determine component length. One-step equals 2" increase in flue diameter.

Step	1	2	3	4	5	6
"L" Length	5" (127)	10" (254)	15" (381)	20" (508)	25" (635)	30" (762)

NOTES:

1. When ordering specify both diameters with small diameter first (ie. 18PICTI22 for 18" to 22").
2. Please contact factory for larger diameters.



ECCENTRIC TAPERED INCREASER (ETI)

6" - 36" Diameters

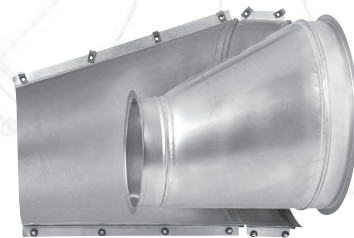
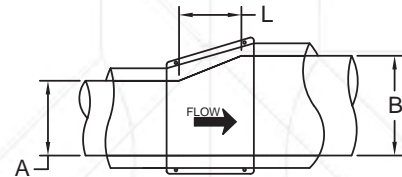
Flow Resistance $K = .51 \frac{[1 - (\frac{A}{B})^2]^2}{(\frac{A}{B})^4}$

Tapered increasers are preferred over step increasers when space permits. Refer to the table below to determine component length. One-step equals 2" increase in flue diameter.

Step	1	2	3	4	5	6
"L" Length	10" (254)	10" (254)	15" (381)	20" (508)	25" (635)	30" (762)

NOTES:

1. When ordering specify both diameters with small diameter first (ie. 18PICETI22 for 18" to 22").
2. Please contact factory for larger diameters.



COMPONENTS

15° ELBOW (15L)

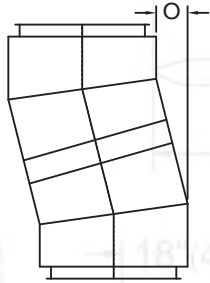
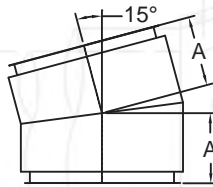
Flow Resistance K = 0.06

Offset Distance:

$$O = 2 \times "A" \times 0.259$$

Offset distance with pipe length between elbows:

$$O = (2 \times "A" + \text{pipe length}) \times 0.259$$



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (152)	6.00" (152)	6.00" (152)	6.00" (152)	6.00" (152)
8" (203)	6.00" (152)	6.00" (152)	6.00" (152)	7.75" (197)
10" (254)	6.00" (152)	6.00" (152)	7.75" (197)	7.75" (197)
12" (305)	6.00" (152)	7.75" (197)	7.75" (197)	7.75" (197)
14" (356)	7.75" (197)	7.75" (197)	7.75" (197)	7.75" (197)
16" (406)	7.75" (197)	7.75" (197)	7.75" (197)	7.75" (197)

PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (457)	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" (660)	8.50" (216)	8.50" (216)	8.50" (216)	8.50" (216)
28" (711)	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" (279)
34" (864)	8.50" (216)	8.50" (216)	8.50" (216)	11.00" (279)
36" (914)	8.50" (216)	11.00" (279)	11.00" (279)	11.00" (279)
38" (965)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
40" (1016)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
42" (1067)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
44" (1118)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
46" (1168)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
48" (1219)	11.00" (279)	11.00" (279)	N/A	11.00" (279)

30° ELBOW (30L)

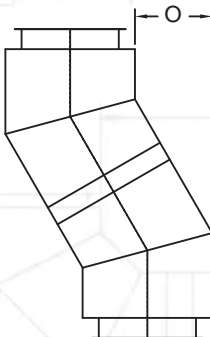
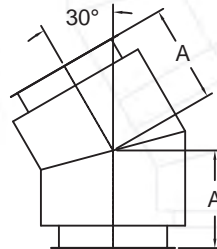
Flow Resistance K = 0.12

Offset Distance:

$$O = 2 \times "A" \times 0.5$$

Offset distance with pipe length between elbows:

$$O = (2 \times "A" + \text{pipe length}) \times 0.5$$



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (152)	6.00" (152)	6.00" (152)	6.00" (152)	6.00" (152)
8" (203)	6.00" (152)	6.00" (152)	6.00" (152)	7.75" (197)
10" (254)	6.00" (152)	6.00" (152)	7.75" (197)	7.75" (197)
12" (305)	6.00" (152)	7.75" (197)	7.75" (197)	7.75" (197)
14" (356)	7.75" (197)	7.75" (197)	7.75" (197)	7.75" (197)
16" (406)	7.75" (197)	7.75" (197)	7.75" (197)	7.75" (197)

PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (457)	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" (660)	8.50" (216)	8.50" (216)	8.50" (216)	8.50" (216)
28" (711)	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" (279)
34" (864)	8.50" (216)	8.50" (216)	11.00" (279)	11.00" (279)
36" (914)	8.50" (216)	11.00" (279)	11.00" (279)	11.00" (279)
38" (965)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
40" (1016)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
42" (1067)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
44" (1118)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
46" (1168)	11.00" (279)	11.00" (279)	N/A	11.00" (279)
48" (1219)	11.00" (279)	11.00" (279)	N/A	11.00" (279)

45° ELBOW (45L)

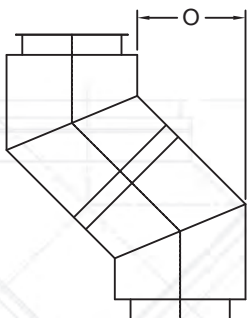
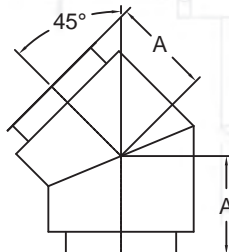
Flow Resistance K = 0.15

Offset Distance:

$$O = 2 \times "A" \times 0.707$$

Offset distance with pipe length between elbows:

$$O = (2 \times "A" + \text{pipe length}) \times 0.707$$



PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (152)	7.00" (178)	7.00" (178)	7.00" (178)	7.00" (178)
8" (203)	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" (260)
12" (305)	7.00" (178)	10.00" (254)	10.25" (260)	10.25" (260)
14" (356)	10.00" (254)	10.25" (260)	10.25" (260)	10.25" (260)
16" (406)	10.25" (260)	10.25" (260)	10.25" (260)	10.25" (260)

PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
18" (457)	10.25" (260)	10.25" (260)	10.25" (260)	10.25" (260)
20" (508)	10.25" (260)	10.25" (260)	10.25" (260)	11.75" (298)
22" (559)	10.25" (260)	10.25" (260)	11.75" (298)	11.75" (298)
24" (610)	10.25" (260)	11.75" (298)	11.75" (298)	11.75" (298)
26" (660)	11.75" (298)	11.75" (298)	11.75" (298)	11.75" (298)
28" (711)	11.75" (298)	11.75" (298)	11.75" (298)	11.75" (298)
30" (762)	11.75" (298)	11.75" (298)	11.75" (298)	11.75" (298)
32" (813)	11.75" (298)	11.75" (298)	11.75" (298)	14.00" (356)
34" (864)	11.75" (298)	11.75" (298)	14.00" (356)	14.00" (356)
36" (914)	11.75" (298)	14.00" (356)	14.00" (356)	14.00" (356)
38" (965)	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" (1168)	14.00" (356)	14.00" (356)	N/A	15.25" (387)
48" (1219)	14.00" (356)	15.25" (387)	N/A	15.25" (387)

COMPONENTS

90° ELBOW (90L)

Flow Resistance K:

6" - 8" = 0.38

10" - 18" = 0.42

20" - 26" = 0.54

28" - 36" = 0.66

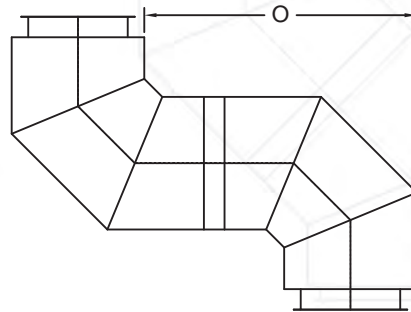
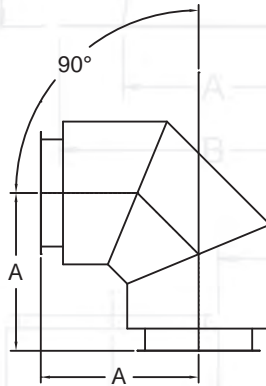
38" - 48" = 0.72

Offset Distance:

$O = 2 \times "A"$

Offset Distance with pipe length between elbows:

$O = 2 \times "A" + \text{pipe length}$

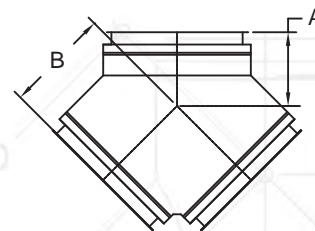


PIPE I.D.	A			
	PSW / PIC / 1G	2G	3G	4G
6" (152)	11" (279)	12" (305)	13" (330)	14" (356)
8" (203)	12" (305)	13" (330)	14" (356)	15" (381)
10" (254)	13" (330)	14" (356)	15" (381)	16" (406)
12" (305)	14" (356)	15" (381)	16" (406)	17" (432)
14" (356)	15" (381)	16" (406)	17" (432)	18" (457)
16" (406)	16" (406)	17" (432)	18" (457)	19" (483)
18" (457)	17" (432)	18" (457)	19" (483)	20" (508)
20" (508)	18" (457)	19" (483)	20" (508)	21" (533)
22" (559)	19" (483)	20" (508)	21" (533)	22" (559)
24" (610)	20" (508)	21" (533)	22" (559)	23" (584)
26" (660)	21" (533)	22" (559)	23" (584)	24" (610)
28" (711)	22" (559)	23" (584)	24" (610)	25" (635)
30" (762)	23" (584)	24" (610)	25" (635)	26" (660)
32" (813)	24" (610)	25" (635)	26" (660)	27" (686)
34" (864)	25" (635)	26" (660)	27" (686)	28" (711)
36" (914)	26" (660)	27" (686)	28" (711)	29" (737)
38" (965)	27" (686)	28" (711)	N/A	30" (762)
40" (1016)	28" (711)	29" (737)	N/A	31" (787)
42" (1067)	29" (737)	30" (762)	N/A	32" (813)
44" (1118)	30" (762)	31" (787)	N/A	33" (838)
46" (1168)	31" (787)	32" (813)	N/A	34" (864)
48" (1219)	32" (813)	33" (838)	N/A	35" (889)

90° WYE (90Y)

6" - 36" Diameters

Flow Resistance K = 0.6



PIPE I.D.	PSW / PIC / 1G		2G		3G		4G	
	A	B	A	B	A	B	A	B
6" (152)	5.12" (130)	9" (229)	5.62" (143)	10" (254)	6.00" (152)	11" (279)	6.50" (165)	12" (305)
8" (203)	5.62" (143)	10" (254)	6.00" (152)	11" (279)	6.50" (165)	12" (305)	7.00" (178)	13" (330)
10" (254)	6.00" (152)	11" (279)	6.50" (165)	12" (305)	7.00" (178)	13" (330)	7.25" (184)	14" (356)
12" (305)	6.50" (165)	12" (305)	7.00" (178)	13" (330)	7.25" (184)	14" (356)	7.75" (197)	15" (381)
14" (356)	7.00" (178)	13" (330)	7.25" (184)	14" (356)	7.75" (197)	15" (381)	8.12" (206)	16" (406)
16" (406)	7.25" (184)	14" (356)	7.75" (197)	15" (381)	8.12" (206)	16" (406)	8.50" (216)	17" (432)
18" (457)	7.75" (197)	15" (381)	8.12" (206)	16" (406)	8.50" (216)	17" (432)	9.00" (229)	18" (457)
20" (508)	8.12" (206)	16" (406)	8.50" (216)	17" (432)	9.00" (229)	18" (457)	9.37" (238)	19" (483)
22" (559)	8.50" (216)	17" (432)	9.00" (229)	18" (457)	9.37" (238)	19" (483)	9.75" (248)	20" (508)
24" (610)	9.00" (229)	18" (457)	9.37" (238)	19" (483)	9.75" (248)	20" (508)	10.25" (260)	21" (533)
26" (660)	9.37" (238)	19" (483)	9.75" (248)	20" (508)	10.25" (260)	21" (533)	10.62" (270)	22" (559)
28" (711)	9.75" (248)	20" (508)	10.25" (260)	21" (533)	10.62" (270)	22" (559)	11.12" (282)	23" (584)
30" (762)	10.25" (260)	21" (533)	10.62" (270)	22" (559)	11.12" (282)	23" (584)	11.50" (292)	24" (610)
32" (813)	10.62" (270)	22" (559)	11.12" (282)	23" (584)	11.50" (292)	24" (610)	11.87" (302)	25" (635)
34" (864)	11.12" (282)	23" (584)	11.50" (292)	24" (610)	11.87" (302)	25" (635)	12.25" (311)	26" (660)
36" (914)	11.50" (292)	24" (610)	11.87" (302)	25" (635)	12.25" (311)	26" (660)	12.62" (321)	27" (686)

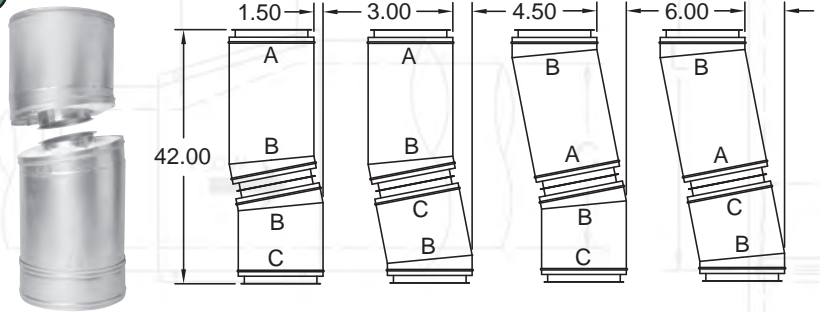
COMPONENTS

VARIABLE OFFSET KIT (VOK)

Flow Resistance $K = 0.09$
Assembled Length = 42"

ENDS JOINED	OFFSET
B-B	1.50"
B-C	3.00"
A-B	4.50"
A-C	6.00"

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



90° MANIFOLD TEE (90MT)

Flow Resistance $K = 1.25$

A = Pipe I.D.

B = "C" + (2 x "D")

C = Tap I.D.

D = PSW/PIC/IPIC-1 = 5"

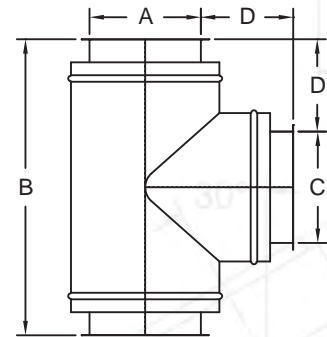
IPIC-2 = 6"

IPIC-3 = 7"

IPIC-4 = 8"

NOTES:

1. Specify tap diameter (C) at time of order
2. Tap diameter can be reduced by 1-4 steps as standard.



BOOT TEE (BT)

6" - 30" Diameters

Flow Resistance $K = 0.65$

A = Pipe I.D.

B = "C" + "E" + "F"

C = Tap I.D.

D, E, F =

PSW/PIC/IPIC-1 = 6", 5" & 7"

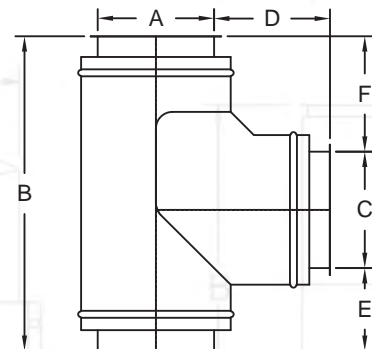
IPIC-2 = 7", 6" & 8"

IPIC-3 = 8", 7" & 9"

IPIC-4 = 9", 8" & 10"

NOTES:

1. Specify tap diameter (C) at time of order
2. Tap diameter can be reduced by 1-4 steps as standard.



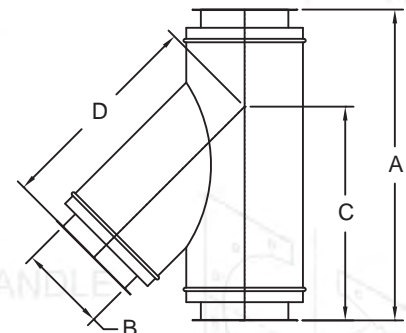
45° MANIFOLD TEE (45MT)

Flow Resistance $K = 0.4$

For low resistance flow into a vertical or horizontal run.

NOTES:

1. Specify tap diameter (B) when ordering.
2. Tap diameter can be reduced by 1-4 steps as standard.
3. For dimensional information see tables on pages 28-35.



COMPONENTS

DOUBLE LATERAL (DL)

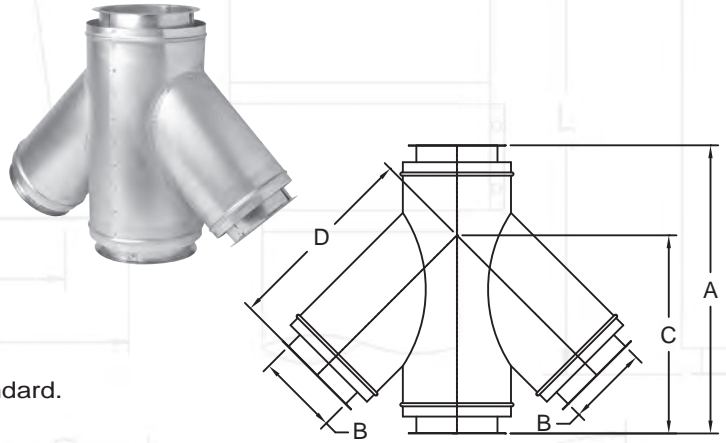
8" - 48" Diameters

Flow Resistance K = 0.4

For use when centrally connecting two appliances being manifolded into a common chimney.

NOTES:

1. Specify tap diameter (B) when ordering, tap diameter must be less than body diameter.
2. For dimensional information see tables on pages 28-35.
3. Tap diameter can be reduced by 1-4 steps as standard.

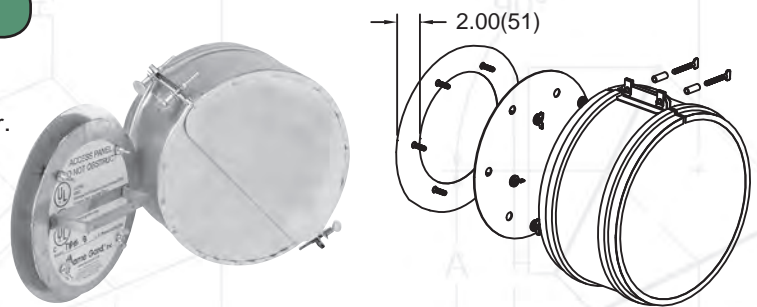


TOOLESS ACCESS PANEL (TAP)

6" - 36" Diameters

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

NOTE: Custom lengths available, please contact factory.



SIDEWALL TOOLES ACCESS PANEL (STAP)

10" - 36" Diameters

Facilitates inspections and cleaning. Can be installed in horizontal/vertical runs.

NOTE: Horizontal run opening must be above the centerline of the duct.

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



DRAIN TEE CAP W/ CASING END CLOSURE (TC)

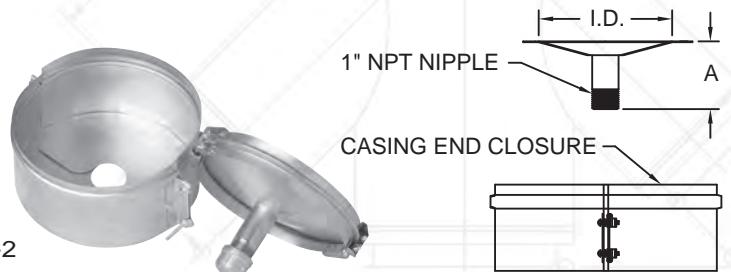
Provides drain port for rain or condensation.

NOTE: To compute length:

$$A = \frac{(I.D. - 1.343)}{2} \times .268 + \text{Nipple Length}$$

Add 3" for Nipple on PSW/PIC/IPIC-1/IPIC-2

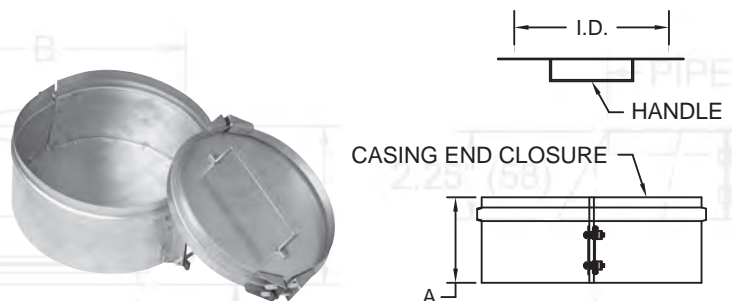
Add 5" for Nipple on IPIC-3 & IPIC-4



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

Closes and seals unused port of Tees, Wyes, and Laterals.

NOTE: A = 5.375" PIC/IPIC-1
6.375" IPIC-2
7.375" IPIC-3
8.375" IPIC-4



COMPONENTS

STACK CAP (C/CB)

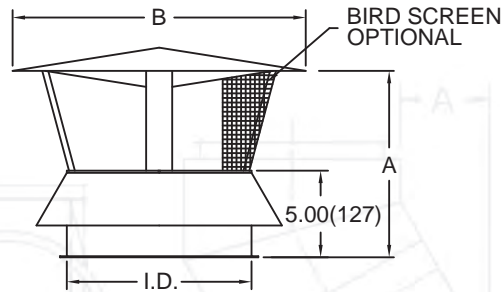
6" - 36" Diameters

Flow resistance $K = 0.5$

Provides partial rain protection.
Use of Tee Cap or Drain Section is recommended.

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

PIPE I.D.	A	B	PIPE I.D.	A	B
6" (152)	8.00" (203)	11.00" (279)	22" (559)	20.00" (508)	38.00" (965)
8" (203)	10.00" (254)	14.00" (356)	24" (610)	22.00" (559)	41.00" (1041)
10" (254)	12.00" (305)	17.00" (432)	26" (660)	23.00" (584)	44.00" (1118)
12" (305)	13.00" (330)	21.00" (533)	28" (711)	25.00" (635)	48.00" (1219)
14" (356)	14.00" (356)	24.00" (610)	30" (762)	27.00" (686)	52.00" (1321)
16" (406)	16.00" (406)	28.00" (711)	32" (813)	28.00" (711)	56.00" (1422)
18" (457)	17.00" (432)	31.00" (787)	34" (864)	30.00" (762)	60.00" (1524)
20" (508)	19.00" (483)	34.00" (864)	36" (914)	31.00" (787)	64.00" (1626)



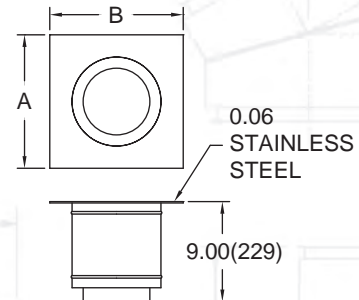
FAN ADAPTER PLATE (FAP)

6" - 36" Diameters

Connects to the inlet of an upblast fan.

Plate dimensions (A by B) = outside dimensions of curb less .25".

NOTE: Provide dimensions at order entry.
Specify O.D. of curb or plate.

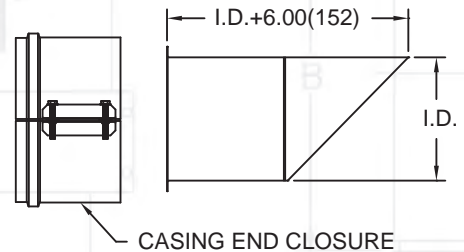
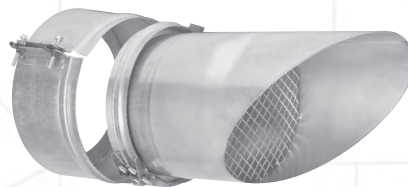


MITER CUT (MC)

6" - 36" Diameters

Horizontal termination;
standard with bird screen.

NOTE: Please contact factory for larger diameters.



COMPONENTS

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

STORM COLLAR



SUPPORT COLLAR (RSA ONLY)



LATERAL SPACER RING



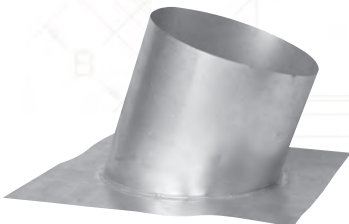
THIMBLE



FLASHING



FIXED PITCH FLASHING



For use when pipe passes through a combustible roof structure to reduce clearance 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/IPIC-1: I.D. + 8"
- IPIC-2: I.D. + 10"
- IPIC-3: I.D. + 12"
- IPIC-4: I.D. + 14"

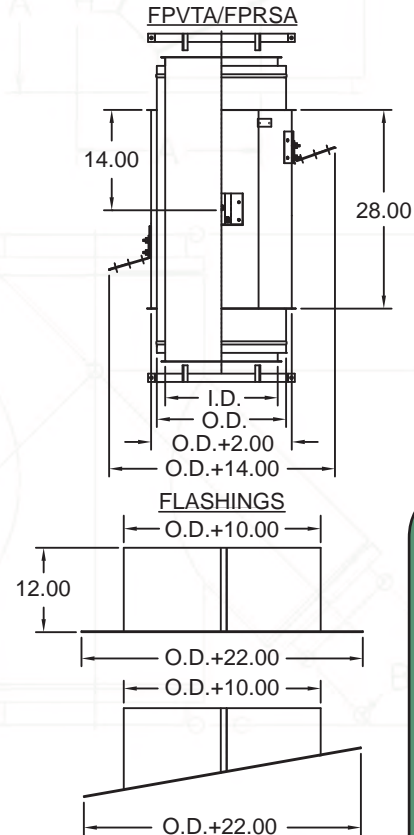
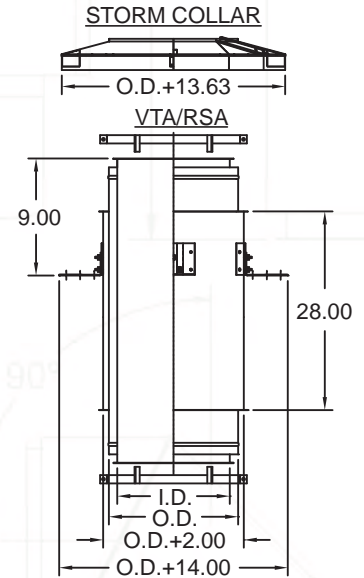
NOTES:

1. Thimble for flat roof extends 9" into flashing.
2. Use VTA / RSA on flat to 1/12 pitch applications.
3. Use FPVTA / FPRSA on 1/12 - 12/12 pitch applications.
4. Specify pitch when ordering
Example: 4/12 pitch = PICFPVTA4 or PICFPRSA4

MAXIMUM PITCH FOR FPVTA & FPRSA (28" LENGTH THIMBLE)

	PIC	IPIC-1	IPIC-2	IPIC-3	IPIC-4
6PICFPVTA & RSA	12/12	12/12	12/12	11/12	11/12
8PICFPVTA & RSA	12/12	12/12	12/12	10/12	10/12
10PICFPVTA & RSA	12/12	12/12	11/12	9/12	9/12
12PICFPVTA & RSA	11/12	11/12	10/12	9/12	9/12
14PICFPVTA & RSA	10/12	10/12	9/12	8/12	8/12
16PICFPVTA & RSA	9/12	9/12	9/12	8/12	8/12
18PICFPVTA & RSA	9/12	9/12	8/12	7/12	7/12
20PICFPVTA & RSA	8/12	8/12	8/12	7/12	7/12
22PICFPVTA & RSA	8/12	8/12	7/12	7/12	7/12
24PICFPVTA & RSA	7/12	7/12	7/12	6/12	6/12
26PICFPVTA & RSA	7/12	7/12	7/12	6/12	6/12
28PICFPVTA & RSA	7/12	7/12	6/12	6/12	6/12
30PICFPVTA & RSA	6/12	6/12	6/12	5/12	5/12
32PICFPVTA & RSA	6/12	6/12	6/12	5/12	5/12
34PICFPVTA & RSA	6/12	6/12	5/12	5/12	5/12
36PICFPVTA & RSA	5/12	5/12	5/12	5/12	5/12

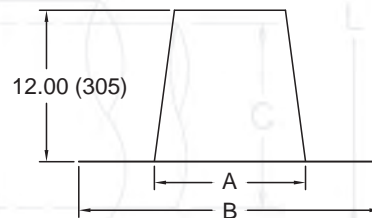
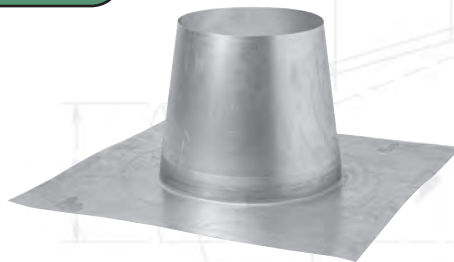
NOTE: For pitches not listed, please contact factory.



COMPONENTS

TALL CONE FLASHING (F)

Flat roof applications



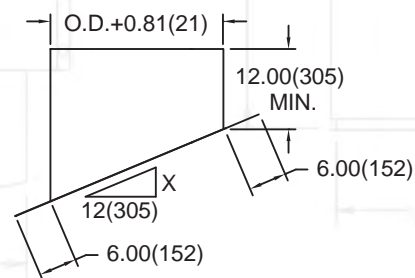
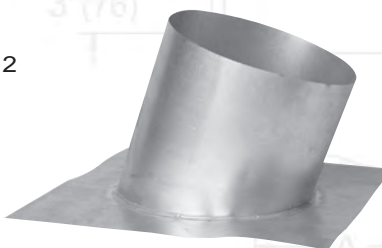
PIPE I.D.	PSW		PIC/1G		2G		3G		4G	
	A	B	A	B	A	B	A	B	A	B
6" (152)	10.00" (254)	22.00" (559)	12.00" (305)	24.00" (610)	14.00" (356)	26.00" (660)		28.00" (711)	18.00" (457)	30.00" (762)
8" (203)	12.00" (305)	24.00" (610)	14.00" (356)	26.00" (660)	16.00" (406)	28.00" (711)	18.00" (457)	30.00" (762)	20.00" (508)	32.00" (813)
10" (254)	14.00" (356)	26.00" (660)	16.00" (406)	28.00" (711)	18.00" (457)	30.00" (762)	20.00" (508)	32.00" (813)	22.00" (559)	34.00" (864)
12" (305)	16.00" (406)	28.00" (711)	18.00" (457)	30.00" (762)	20.00" (508)	32.00" (813)	22.00" (559)	34.00" (864)	24.00" (610)	36.00" (914)
14" (356)	18.00" (457)	30.00" (762)	20.00" (508)	32.00" (813)	22.00" (559)	34.00" (864)	24.00" (610)	36.00" (914)	26.00" (660)	38.00" (965)
16" (406)	20.00" (508)	32.00" (813)	22.00" (559)	34.00" (864)	24.00" (610)	36.00" (914)	26.00" (660)	38.00" (965)	28.00" (711)	40.00" (1016)
18" (457)	22.00" (559)	34.00" (864)	24.00" (610)	36.00" (914)	26.00" (660)	38.00" (965)	28.00" (711)	40.00" (1016)	30.00" (762)	42.00" (1067)
20" (508)	24.00" (610)	36.00" (914)	26.00" (660)	38.00" (965)	28.00" (711)	40.00" (1016)	30.00" (762)	42.00" (1067)	32.00" (813)	44.00" (1118)
22" (559)	26.00" (660)	38.00" (965)	28.00" (711)	40.00" (1016)	30.00" (762)	42.00" (1067)	32.00" (813)	44.00" (1118)	34.00" (864)	46.00" (1168)
24" (610)	28.00" (711)	40.00" (1016)	30.00" (762)	42.00" (1067)	32.00" (813)	44.00" (1118)	34.00" (864)	46.00" (1168)	36.00" (914)	48.00" (1219)
26" (660)	30.00" (762)	42.00" (1067)	32.00" (813)	44.00" (1118)	34.00" (864)	46.00" (1168)	36.00" (914)	48.00" (1219)	38.00" (965)	50.00" (1270)
28" (711)	32.00" (813)	44.00" (1118)	34.00" (864)	46.00" (1168)	36.00" (914)	48.00" (1219)	38.00" (965)	50.00" (1270)	40.00" (1016)	52.00" (1321)
30" (762)	34.00" (864)	46.00" (1168)	36.00" (914)	48.00" (1219)	38.00" (965)	50.00" (1270)	40.00" (1016)	52.00" (1321)	42.00" (1067)	54.00" (1372)
32" (813)	36.00" (914)	48.00" (1219)	38.00" (965)	50.00" (1270)	40.00" (1016)	52.00" (1321)	42.00" (1067)	54.00" (1372)	44.00" (1118)	56.00" (1422)
34" (864)	38.00" (965)	50.00" (1270)	40.00" (1016)	52.00" (1321)	42.00" (1067)	54.00" (1372)	44.00" (1118)	56.00" (1422)	46.00" (1168)	58.00" (1473)
36" (914)	40.00" (1016)	52.00" (1321)	42.00" (1067)	54.00" (1372)	44.00" (1118)	56.00" (1422)	46.00" (1168)	58.00" (1473)	48.00" (1219)	60.00" (1524)
38" (965)	42.00" (1067)	54.00" (1372)	44.00" (1118)	56.00" (1422)	46.00" (1168)	58.00" (1473)	N/A	N/A	50.00" (1270)	62.00" (1575)
40" (1016)	44.00" (1118)	56.00" (1422)	46.00" (1168)	58.00" (1473)	48.00" (1219)	60.00" (1524)	N/A	N/A	52.00" (1321)	64.00" (1626)
42" (1067)	46.00" (1168)	58.00" (1473)	48.00" (1219)	60.00" (1524)	50.00" (1270)	62.00" (1575)	N/A	N/A	54.00" (1372)	66.00" (1676)
44" (1118)	48.00" (1219)	60.00" (1524)	50.00" (1270)	62.00" (1575)	52.00" (1321)	64.00" (1626)	N/A	N/A	56.00" (1422)	68.00" (1727)
46" (1168)	50.00" (1270)	62.00" (1575)	52.00" (1321)	64.00" (1626)	54.00" (1372)	66.00" (1676)	N/A	N/A	58.00" (1473)	70.00" (1778)
48" (1219)	52.00" (1321)	64.00" (1626)	54.00" (1372)	66.00" (1676)	56.00" (1422)	68.00" (1727)	N/A	N/A	60.00" (1524)	72.00" (1829)

FIXED PITCH FLASHING (FPF)

6" - 36" Diameters

NOTES:

1. $X = \text{Pitch} \left(\frac{\text{Rise}}{\text{Run}} \right)$; Available in 1/12 - 12/12
2. Please specify pitch when ordering.
3. Storm Collar is included with Flashing.
Example: 4/12 pitch = PICFPF4

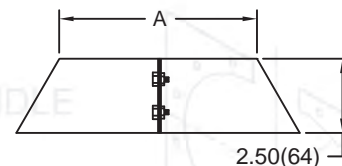


STACK CLOSURE RING (CR)

A = Pipe Diameter (I.D.)

Attaches to flue and shields insulation from the weather when open stack is desired.

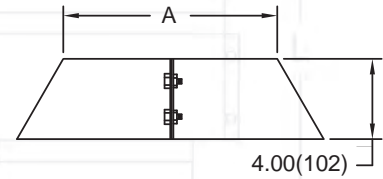
NOTE: Provide a Tee Cap or Drain Section for moisture removal.



COMPONENTS

STORM COLLAR (SC)

A = Pipe Diameter (O.D.)



FULL ANGLE RING (FAR)

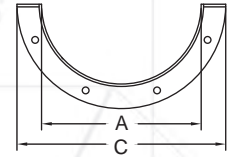
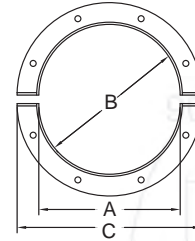
Provides lateral support for vertical runs.
(Zinc Plated)

NOTE: Allows pipe movement for thermal expansion.



FULL ANGLE RING

HALF ANGLE RING



HALF ANGLE RING (HAR)

Provides support for horizontal runs.
(Zinc Plated)



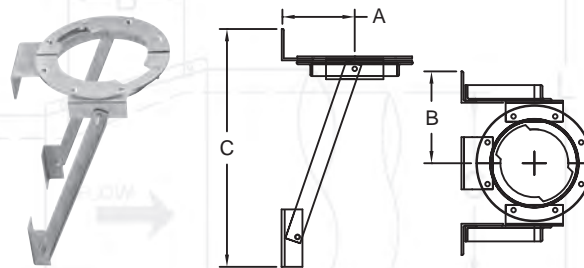
PRODUCT					DIMENSIONS			
PIPE I.D.					Inside	Hole Centerline	Outside	Hole Qty.
PSW	PIC/IPIC	IPIC-2	IPIC-3	IPIC-4	A	B	C	D
6" (152)	-	-	-	-	6.12" (155)	7.50" (191)	8.62" (219)	8
8" (203)	6" (152)	-	-	-	8.12" (206)	9.50" (241)	10.62" (270)	8
10" (254)	8" (203)	6" (152)	-	-	10.19" (259)	11.56" (294)	12.69" (322)	8
12" (305)	10" (254)	8" (203)	6" (152)	-	12.19" (310)	13.81" (351)	15.19" (386)	12
14" (356)	12" (305)	10" (254)	8" (203)	6" (152)	14.19" (360)	15.81" (402)	17.19" (437)	12
16" (406)	14" (356)	12" (305)	10" (254)	8" (203)	16.25" (413)	18.12" (460)	19.75" (502)	16
18" (457)	16" (406)	14" (356)	12" (305)	10" (254)	18.25" (464)	20.12" (511)	21.75" (552)	16
20" (508)	18" (457)	16" (406)	14" (356)	12" (305)	20.25" (514)	22.12" (562)	23.75" (603)	20
22" (559)	20" (508)	18" (457)	16" (406)	14" (356)	22.25" (565)	24.12" (613)	25.75" (654)	20
24" (610)	22" (559)	20" (508)	18" (457)	16" (406)	24.25" (616)	26.12" (663)	27.75" (705)	20
26" (660)	24" (610)	22" (559)	20" (508)	18" (457)	26.25" (667)	28.50" (724)	30.25" (768)	24
28" (711)	26" (660)	24" (610)	22" (559)	20" (508)	28.25" (718)	30.50" (775)	32.25" (819)	24
30" (762)	28" (711)	26" (660)	24" (610)	22" (559)	30.25" (768)	32.50" (826)	34.25" (870)	28
32" (813)	30" (762)	28" (711)	26" (660)	24" (610)	32.25" (819)	34.50" (876)	36.25" (921)	28
34" (864)	32" (813)	30" (762)	28" (711)	26" (660)	34.25" (870)	36.50" (927)	38.25" (972)	32
36" (914)	34" (864)	32" (813)	30" (762)	28" (711)	36.25" (921)	38.50" (978)	40.25" (1022)	32
38" (965)	36" (914)	34" (864)	32" (813)	30" (762)	38.25" (972)	40.50" (1029)	42.25" (1073)	36
40" (1016)	38" (965)	36" (914)	34" (864)	32" (813)	40.25" (1022)	42.50" (1080)	44.25" (1124)	36
42" (1067)	40" (1016)	38" (965)	36" (914)	34" (864)	42.25" (1073)	44.50" (1130)	46.25" (1175)	40
44" (1118)	42" (1067)	40" (1016)	38" (965)	36" (914)	44.25" (1124)	46.50" (1181)	48.25" (1226)	40
46" (1168)	44" (1118)	42" (1067)	40" (1016)	38" (965)	46.25" (1175)	48.50" (1232)	50.25" (1276)	44
48" (1219)	46" (1168)	44" (1118)	42" (1067)	40" (1016)	48.25" (1226)	50.50" (1283)	52.25" (1327)	44
-	48" (1219)	46" (1168)	44" (1118)	42" (1067)	50.25" (1276)	52.50" (1334)	54.25" (1378)	48
-	-	48" (1219)	46" (1168)	44" (1118)	52.25" (1327)	54.50" (1384)	56.25" (1429)	48
-	-	-	48" (1219)	46" (1168)	54.25" (1378)	56.50" (1435)	58.25" (1480)	48
-	-	-	-	48" (1219)	56.25" (1429)	58.50" (1486)	60.25" (1530)	50

COMPONENTS

WALL SUPPORT ASSEMBLY (WSA)

Provides vertical or horizontal rigid support.

NOTE: Does not allow pipe movement for thermal expansion. (Zinc Plated)



PIPE I.D.	PSW / PIC / 1G			2G		
	A	B	C	A	B	C
6" (152)	7.87" (200)	7.25" (184)	26.25" (667)	8.87" (225)	8.12" (206)	26.00" (660)
8" (203)	8.87" (225)	8.12" (206)	26.00" (660)	10.12" (257)	9.50" (241)	29.50" (749)
10" (254)	10.12" (257)	9.50" (241)	29.50" (749)	11.12" (282)	10.50" (267)	29.00" (737)
12" (305)	11.12" (282)	10.50" (267)	29.00" (737)	12.37" (314)	11.75" (298)	28.50" (724)
14" (356)	12.37" (314)	11.75" (298)	28.50" (724)	13.37" (340)	12.75" (324)	31.25" (794)
16" (406)	13.37" (340)	12.75" (324)	31.25" (794)	14.37" (365)	13.75" (349)	30.75" (781)
18" (457)	14.37" (365)	13.75" (349)	30.75" (781)	15.37" (390)	14.75" (375)	34.75" (883)
20" (508)	15.37" (390)	14.75" (375)	34.75" (883)	16.37" (416)	15.75" (400)	34.25" (870)
22" (559)	16.37" (416)	15.75" (400)	34.25" (870)	17.62" (448)	17.00" (432)	33.75" (857)
24" (610)	17.62" (448)	17.00" (432)	33.75" (857)	18.62" (473)	18.00" (457)	38.75" (984)
26" (660)	18.62" (473)	18.00" (457)	38.75" (984)	19.62" (498)	19.00" (483)	38.25" (972)
28" (711)	19.62" (498)	19.00" (483)	38.25" (972)	20.62" (524)	20.00" (508)	37.75" (959)
30" (762)	20.62" (524)	20.00" (508)	37.75" (959)	21.62" (549)	21.00" (533)	45.25" (1149)
32" (813)	21.62" (549)	21.00" (533)	45.25" (1149)	23.12" (587)	22.50" (572)	44.75" (1137)
34" (864)	23.12" (587)	22.50" (572)	44.75" (1137)	24.12" (613)	23.50" (597)	44.00" (1118)
36" (914)	24.12" (613)	23.50" (597)	44.00" (1118)	25.12" (638)	24.50" (622)	53.75" (1365)

PIPE I.D.	3G			4G		
	A	B	C	A	B	C
6" (152)	10.17" (258)	10.36" (263)	29.00" (737)	11.14" (283)	11.33" (288)	29.62" (752)
8" (203)	10.93" (278)	11.36" (289)	28.50" (724)	12.39" (314)	12.57" (319)	29.00" (737)
10" (254)	12.39" (315)	12.58" (320)	31.25" (794)	13.37" (340)	13.55" (344)	31.86" (809)
12" (305)	13.37" (340)	13.55" (344)	30.75" (781)	14.43" (367)	14.61" (371)	31.00" (787)
14" (356)	14.43" (367)	14.61" (371)	34.75" (883)	15.41" (391)	15.60" (396)	35.36" (898)
16" (406)	15.41" (391)	15.60" (396)	34.25" (870)	16.40" (417)	16.59" (421)	34.88" (886)
18" (457)	16.40" (417)	16.59" (421)	33.75" (845)	17.63" (448)	17.82" (453)	34.17" (868)
20" (508)	17.63" (448)	17.81" (452)	38.75" (984)	18.62" (473)	18.81" (478)	39.37" (1000)
22" (559)	18.62" (473)	18.81" (478)	38.25" (972)	19.65" (499)	19.83" (504)	38.78" (985)
24" (610)	19.65" (499)	19.83" (504)	37.75" (959)	20.64" (524)	20.43" (519)	38.14" (969)
26" (660)	20.64" (524)	20.83" (529)	45.25" (1149)	21.66" (550)	21.85" (555)	45.86" (1165)
28" (711)	21.66" (550)	21.85" (555)	44.75" (1137)	22.66" (576)	22.85" (580)	45.12" (1146)
30" (762)	22.66" (576)	22.85" (581)	44.00" (1118)	23.67" (601)	23.86" (606)	44.60" (1133)
32" (813)	23.67" (601)	23.86" (606)	53.75" (1365)	24.67" (627)	24.86" (631)	54.25" (1378)
34" (864)	24.67" (627)	25.86" (657)	53.25" (1353)	25.66" (652)	25.87" (657)	53.25" (1353)
36" (914)	25.66" (652)	25.87" (657)	52.75" (1340)	26.68" (678)	26.87" (682)	53.21" (1352)

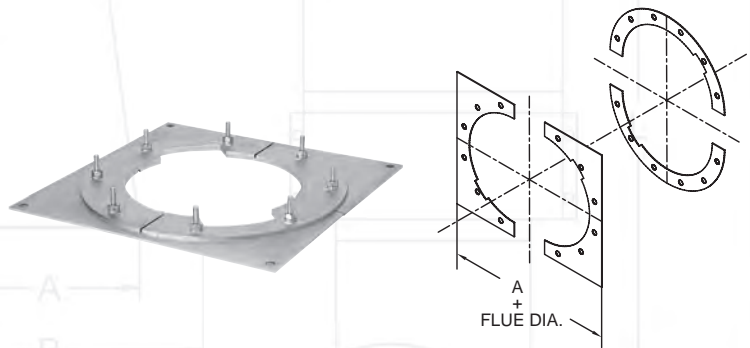
COMPONENTS

PLATE SUPPORT (PS)

Provides vertical or horizontal rigid support. Includes split plates (Zinc Plated), clamp flanges, and 1/2 closure bands.

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

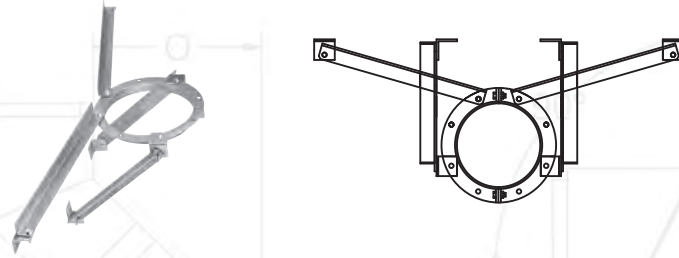
NOTE: Does not allow pipe movement for thermal expansion.



WALL GUIDE (WG)

Provides lateral support. (Zinc Plated)

NOTE: Allows pipe movement for thermal expansion.



FLOOR GUIDE (FG)

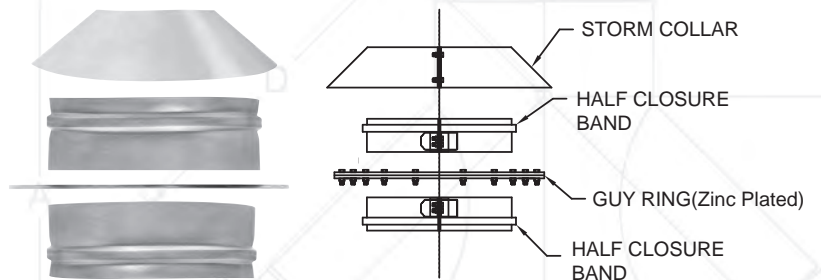
For use at each floor to ensure correct alignment through floor opening. (Zinc Plated)



GUY RING (GR)

Installed at the flange to flange joint of two sections of pipe. Storm Collar and half closure bands are included.

NOTE: See installation instructions for correct location.

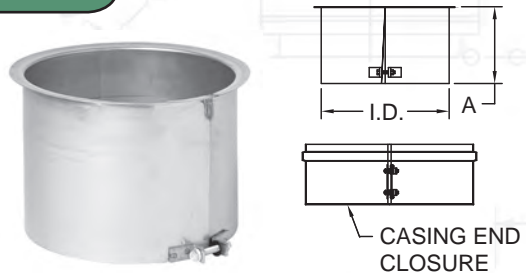


SINGLE WALL BOILER ADAPTER (SBA/SBA4)

Flow Resistance K= same as pipe
Attaches pipe to straight collar outlets.
PIC and IPIC applications include Casing End Closure.

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

NOTE: Casing End Closure not used on PSW applications.

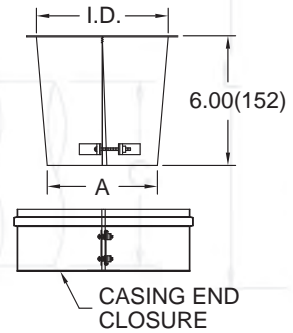


COMPONENTS

REDUCER COLLAR (RC)

Flow Resistance K= same as pipe
Attaches pipe to an outlet source of smaller diameter. Specify "A" dimension when ordering e.g. 6PIC4RC

NOTE: Maximum of 2" reduction recommended.

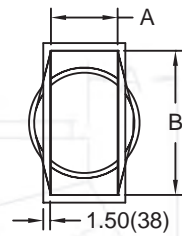


SQUARE TO ROUND (STR)

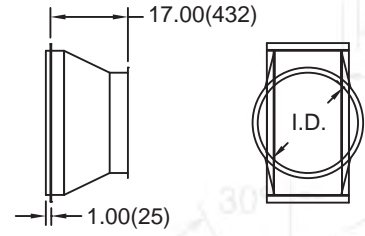
Transitions from square duct to round duct.

NOTES:

1. Specify dimensional data when ordering.
2. Eccentric and Offset STR's available as custom options upon request.



BOTTOM VIEW



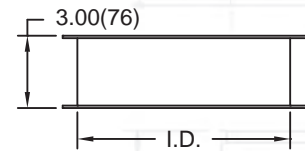
FRONT VIEW

TOP VIEW

ROUND HOOD COLLAR (RHC)

NOTES:

1. Can be field welded to hood or supplied to hood manufacturer for installation.
2. Confirm dimensions with hood manufacturer.
3. Requires Round Hood Connection Kit (RHCK) to complete installation.



ROUND HOOD CONNECTION KIT (RHCK)

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



CASING END CLOSURE (CEC)

For use as an end cover when transitioning from double wall to single wall.

NOTE: When ordering, specify

- PICCEC
- IPICCEC-1
- 2
- 3
- 4



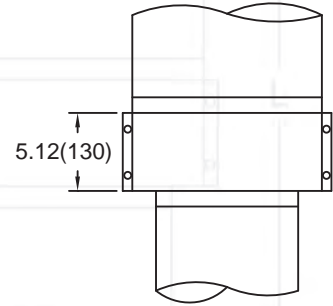
COMPONENTS

TRANSITION BAND (TB)

For use as a joint closure when transitioning from one insulation thickness to another.

NOTE: When ordering, specify

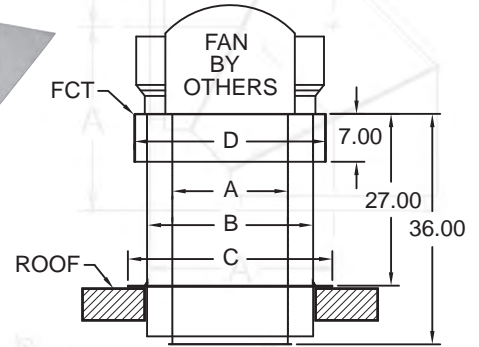
- PICTB-1-2 -2-3
- 1-3 -2-4
- 1-4 -3-4



FAN CURB TERMINATION (FCT)

Available for 3G & 4G systems only. Eliminates curb. With zero clearance to combustibles, roofing materials can be flashed directly to casings.

- A = Pipe I.D.
- B = Outer Casing Diameter
 - 3G: Flue Diameter + 6"
 - 4G: Flue Diameter + 8"
- C = Square Mounting Support: Casing Diameter + 6"
- D = Fan Curb: See Table



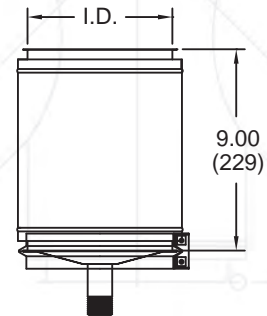
Curb Size - Inches	Pipe I.D.						
	8	10	12	14	16	18	20
18 X 18	X	X	X	3G			
19.5 X 19.5	X	X	X	3G	3G		
22 X 22	X	X	X	X	X		
23 X 23		X	X	X	X		
26.5 X 26.5				X	X	X	X
28 X 28					X	X	X
31.5 X 31.5							X

"3G" - Only available on 3G systems. Specify Curb Dimensions when ordering. Example: Curb 19.5" x 19.5" = FCT195

DRAIN BUCKET (DB)

6" - 36" Diameters

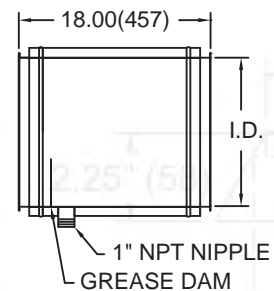
Used at the base of a vertical riser as a drain reservoir and provides cleanout access.



DUCT DRAIN (DR)

6" - 36" Diameters

Used as a drain point for horizontal runs.

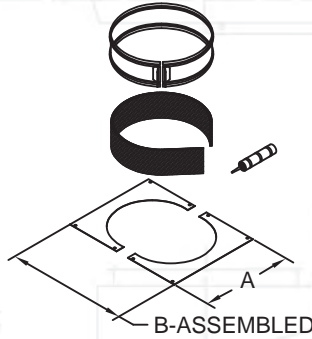
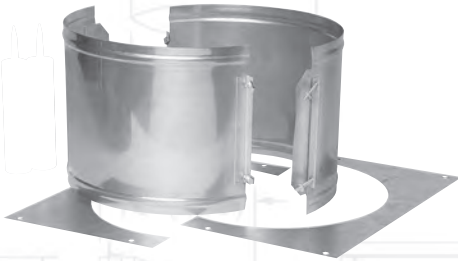


COMPONENTS

THROUGH PENETRATION FIRESTOP KIT (PPK)

6" - 36" Diameters

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".
4. Closure band height is 12"(306)
5. For use on 3G/4G products only.



NOTE: Wall penetration requires two kits; please consult factory.

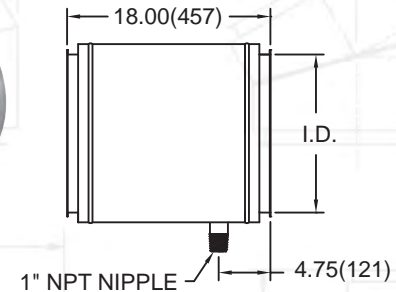
PIPE I.D.	A	B
6" (152)	18" (457)	18" (457)
8" (203)	20" (508)	20" (508)
10" (254)	22" (559)	22" (559)
12" (305)	24" (610)	24" (610)
14" (356)	26" (660)	26" (660)
16" (406)	28" (711)	28" (711)
18" (457)	30" (762)	30" (762)
20" (508)	32" (813)	32" (813)
22" (559)	34" (864)	34" (864)
24" (610)	36" (914)	36" (914)
26" (660)	38" (965)	38" (965)
28" (711)	40" (1016)	40" (1016)
30" (762)	42" (1067)	42" (1067)
32" (813)	44" (1118)	44" (1118)
34" (864)	46" (1168)	46" (1168)
36" (914)	48" (1219)	48" (1219)

NOZZLE SECTION (NS)

6" - 36" Diameters

For use with wash down nozzles, fire suppression systems or as a drain section in a horizontal run.

NOTE: Please contact factory for larger diameters.



SPRINKLER HEAD ACCESS PORT (9SHAP)

6" - 36" Diameters

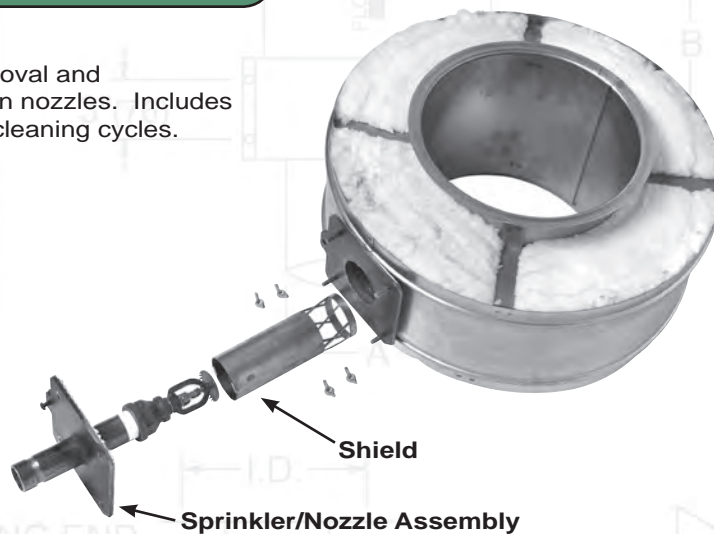
Tooless access for the installation, removal and inspection of the sprinkler or wash down nozzles. Includes shield to protect sprinkler head during cleaning cycles.

Pipe Length: 9"(229)

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

NOTES:

1. *Sprinkler Head* not included.
2. Not UL Listed



COMPONENTS

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.

P071 Joint Sealant, use for UL103HT Appliances

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

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 flange vee band with a soft mallet while tightening band to assure tight seal.
5. Insert insulation strips (IPIC-1, -2, -3, -4) between pipe sections.
6. Install casing closure band. (Seal if external to structure to prevent moisture infiltration.)



COMPONENTS

BODY I.D.	TAP I.D.	TAP I.D.												
		48	46	44	42	40	38	36	34	32	30	28	26	24
48PIC	"A"	80.71	77.88	75.05	72.22	69.40	66.57	63.74	60.91	58.08	55.26	52.43	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
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	36	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
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
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
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
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
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
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
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
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
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	25.48
	"B"	28	26	24	22	20	18	16	14	12	10	8	6	4
	"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	24.25
	"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	29.21
26PIC	"A"	49.60	46.77	43.94	41.11	38.28	35.46	32.63	29.80	27.97	26.14	25.31	24.48	23.65
	"B"	26	24	22	20	18	16	14	12	10	8	6	4	2
	"C"	38.80	37.39	35.97	34.56	33.14	31.73	30.31	28.90	27.49	26.07	24.66	23.25	21.84
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	29.80	28.80	27.80	26.80
24PIC	"A"	46.77	43.94	41.11	38.28	35.46	32.63	29.80	26.97	25.14	24.31	23.48	22.65	21.82
	"B"	24	22	20	18	16	14	12	10	8	6	4	2	0
	"C"	36.39	34.97	33.56	32.14	30.73	29.31	27.90	26.49	25.07	23.66	22.25	20.84	19.43
	"D"	36.39	35.39	34.39	33.39	32.39	31.39	30.39	29.39	28.39	27.39	26.39	25.39	24.39
22PIC	"A"	43.94	41.11	38.28	35.46	32.63	29.80	26.97	24.14	23.31	22.48	21.65	20.82	19.99
	"B"	22	20	18	16	14	12	10	8	6	4	2	0	-2
	"C"	33.97	32.56	31.14	29.73	28.31	26.90	25.49	24.07	22.66	21.25	20.84	19.43	18.02
	"D"	33.97	32.97	31.97	30.97	29.97	28.97	27.97	26.97	25.97	24.97	23.97	22.97	21.97
20PIC	"A"	41.11	38.28	35.46	32.63	29.80	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16
	"B"	20	18	16	14	12	10	8	6	4	2	0	-2	-4
	"C"	31.56	30.14	28.73	27.31	25.90	24.49	23.07	21.66	20.25	18.84	17.43	16.02	14.61
	"D"	31.56	30.56	29.56	28.56	27.56	26.56	25.56	24.56	23.56	22.56	21.56	20.56	19.56
18PIC	"A"	38.28	35.46	32.63	29.80	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33
	"B"	18	16	14	12	10	8	6	4	2	0	-2	-4	-6
	"C"	29.14	27.73	26.31	24.90	23.49	22.07	20.66	19.25	17.84	16.43	15.02	13.61	12.20
	"D"	29.14	28.14	27.14	26.14	25.14	24.14	23.14	22.14	21.14	20.14	19.14	18.14	17.14
16PIC	"A"	35.46	32.63	29.80	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33	16.50
	"B"	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8
	"C"	26.73	25.31	23.90	22.49	21.07	19.66	18.25	16.84	15.43	14.02	12.61	11.20	9.79
	"D"	26.73	25.73	24.73	23.73	22.73	21.73	20.73	19.73	18.73	17.73	16.73	15.73	14.73
14PIC	"A"	32.63	29.80	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33	16.50	15.67
	"B"	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10
	"C"	24.31	22.90	21.49	20.07	18.66	17.25	15.84	14.43	13.02	11.61	10.20	8.79	7.38
	"D"	24.31	23.31	22.31	21.31	20.31	19.31	18.31	17.31	16.31	15.31	14.31	13.31	12.31
12PIC	"A"	29.80	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33	16.50	15.67	14.84
	"B"	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12
	"C"	21.90	20.49	19.07	17.66	16.25	14.84	13.43	12.02	10.61	9.20	7.79	6.38	4.97
	"D"	21.90	20.90	19.90	18.90	17.90	16.90	15.90	14.90	13.90	12.90	11.90	10.90	9.90
10PIC	"A"	26.97	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33	16.50	15.67	14.84	14.01
	"B"	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14
	"C"	19.49	18.07	16.66	15.25	13.84	12.43	11.02	9.61	8.20	6.79	5.38	3.97	2.56
	"D"	19.49	18.49	17.49	16.49	15.49	14.49	13.49	12.49	11.49	10.49	9.49	8.49	7.49
8PIC	"A"	24.14	22.31	21.48	20.65	19.82	18.99	18.16	17.33	16.50	15.67	14.84	14.01	13.18
	"B"	8	6	4	2	0</								

COMPONENTS

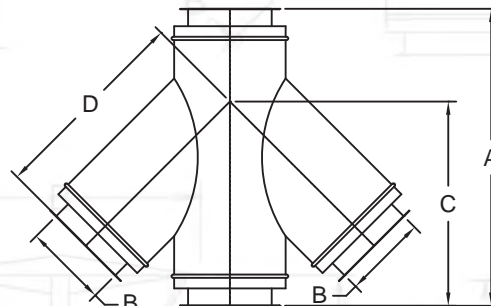
		TAP I.D.													
		48	46	44	42	40	38	36	34	32	30	28	26	24	
BODY I.D.	48PIC	*A* 2050	1978	1906	1834	1763	1691	1619	1547	1475	1404	1332	1260	1188	1116
		B 1219	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559
		C 1660	1624	1588	1552	1516	1480	1444	1409	1373	1337	1301	1265	1229	1193
		D 1660	1634	1609	1584	1558	1533	1507	1482	1457	1431	1406	1380	1355	1329
		46	44	42	40	38	36	34	32	30	28	26	24	22	20
		A 1978	1906	1834	1763	1691	1619	1547	1475	1404	1332	1260	1188	1116	1044
		B 1168	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
		C 1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1240	1204	1168	1132
		D 1599	1573	1548	1522	1497	1472	1446	1421	1395	1370	1345	1319	1294	1268
		44	42	40	38	36	34	32	30	28	26	24	22	20	18
		A 1906	1834	1763	1691	1619	1547	1475	1404	1332	1260	1188	1116	1044	972
		B 1118	1067	1016	965	914	864	813	762	711	660	610	559	508	457
		C 1537	1501	1466	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106	1070
		D 1537	1512	1487	1461	1436	1410	1385	1360	1334	1309	1283	1258	1233	1207
		42	40	38	36	34	32	30	28	26	24	22	20	18	16
		A 1834	1763	1691	1619	1547	1475	1404	1332	1260	1188	1116	1044	972	900
		B 1067	1016	965	914	864	813	762	711	660	610	559	508	457	406
		C 1476	1440	1404	1368	1332	1296	1261	1225	1189	1153	1117	1081	1045	1009
		D 1476	1451	1425	1400	1374	1349	1324	1298	1273	1247	1222	1197	1171	1145
		40	38	36	34	32	30	28	26	24	22	20	18	16	14
		A 1763	1691	1619	1547	1475	1404	1332	1260	1188	1116	1044	972	900	828
		B 1016	965	914	864	813	762	711	660	610	559	508	457	406	355
		C 1415	1379	1343	1307	1271	1235	1199	1163	1128	1091	1056	1020	984	948
		D 1415	1389	1364	1339	1313	1288	1262	1237	1212	1186	1161	1135	1110	1084
	38	36	34	32	30	28	26	24	22	20	18	16	14	12	
	A 1691	1619	1547	1475	1404	1332	1260	1188	1116	1044	972	900	828	756	
	B 965	914	864	813	762	711	660	610	559	508	457	406	355	304	
	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	
	36	34	32	30	28	26	24	22	20	18	16	14	12	10	
	A 1619	1547	1475	1404	1332	1260	1188	1116	1044	972	900	828	756	684	
	B 914	864	813	762	711	660	610	559	508	457	406	355	304	253	
	C 1292	1256	1220	1184	1148	1113	1077	1041	1005	969	933	897	861	825	
	D 1292	1267	1241	1216	1190	1165	1140	1114	1089	1063	1038	1013	987	961	
	34	32	30	28	26	24	22	20	18	16	14	12	10	8	
	A 1547	1475	1404	1332	1260	1188	1116	1044	972	900	828	756	684	612	
	B 864	813	762	711	660	610	559	508	457	406	355	304	253	202	
	C 1231	1195	1159	1123	1087	1051	1015	979	943	908	871	836	800	764	
	D 1231	1205	1180	1155	1129	1104	1078	1053	1028	1002	977	951	926	900	
	32	30	28	26	24	22	20	18	16	14	12	10	8	6	
	A 1475	1404	1332	1260	1188	1116	1044	972	900	828	756	684	612	540	
	B 813	762	711	660	610	559	508	457	406	355	304	253	202	151	
	C 1169	1134	1098	1062	1026	990	954	918	882	846	810	774	738	702	
	D 1169	1144	1119	1093	1068	1042	1017	992	966	941	915	890	865	839	
	30	28	26	24	22	20	18	16	14	12	10	8	6	4	
	A 1404	1332	1260	1188	1116	1044	972	900	828	756	684	612	540	468	
	B 762	711	660	610	559	508	457	406	355	304	253	202	151	100	
	C 1108	1072	1036	1001	964	929	893	857	821	785	749	713	677	641	
	D 1108	1083	1057	1032	1007	981	956	930	905	880	854	829	803	777	
	28	26	24	22	20	18	16	14	12	10	8	6	4	2	
	A 1332	1260	1188	1116	1044	972	900	828	756	684	612	540	468	396	
	B 711	660	610	559	508	457	406	355	304	253	202	151	100	49	
	C 1047	1011	975	939	903	867	831	795	759	724	688	652	616	580	
	D 1047	1021	996	971	945	920	894	869	844	818	793	767	741	715	
	26	24	22	20	18	16	14	12	10	8	6	4	2	0	
	A 1260	1188	1116	1044	972	900	828	756	684	612	540	468	396	324	
	B 660	610	559	508	457	406	355	304	253	202	151	100	49	-2	
	C 986	950	914	878	842	806	770	734	698	662	626	590	554	518	
	D 986	960	935	909	884	859	833	808	782	757	732	706	681	655	
	24	22	20	18	16	14	12	10	8	6	4	2	0	-2	
	A 1188	1116	1044	972	900	828	756	684	612	540	468	396	324	252	
	B 610	559	508	457	406	355	304	253	202	151	100	49	-2	-4	
	C 924	888	852	816	781	744	709	673	637	601	565	529	493	457	
	D 924	899	874	848	823	797	772	747	721	696	670	645	619	594	
	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4	
	A 1116	1044	972	900	828	756	684	612	540	468	396	324	252	180	
	B 559	508	457	406	355	304	253	202	151	100	49	-2	-4	-6	
	C 863	827	791	755	719	683	647	611	576	540	504	468	432	396	
	D 863	837	812	787	761	736	710	685	660	634	609	583	558	532	
	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	
	A 1044	972	900	828	756	684	612	540	468	396	324	252	180	108	
	B 508	457	406	355	304	253	202	151	100	49	-2	-4	-6	-8	
	C 802	766	730	694	658	622	586	550	514	478	442	406	370	334	
	D 802	776	751	725	700	675	649	624	598	573	547	522	496	471	
	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	
	A 972	900	828	756	684	612	540	468	396	324	252	180	108	36	
	B 457	406	355	304	253	202	151	100	49	-2	-4	-6	-8	-10	
	C 740	704	668	632	597	561	525	489	453	417	381	345	309	273	
	D 740	715	689	664	639	613	588	563	537	512	486	461	435	410	
	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	
	A 901	829	757	685	613	541	469	397	325	253	181	109	37	-35	
	B 406	356	305	254	203	152	101	50	-1	-50	-99	-148	-197	-246	
	C 679	643	607	571	535	499	463	427	391	355	319	283	247	211	
	D 679	654	628	603	577	552	526	500	474	448	422	396	370	344	
	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	
	A 829	757	685	613	541	469	397	325	253	181	109	37	-35	-67	
	B 356	305	254	203											

COMPONENTS

BODY I.D.	TAP 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	52.42	49.59	46.77
	"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
46PIC	"A"	80.70	77.87	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94
	"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
44PIC	"A"	77.87	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11
	"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
42PIC	"A"	75.05	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28
	"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
40PIC	"A"	72.22	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45
	"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
38PIC	"A"	69.39	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63
	"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
36PIC	"A"	66.56	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80
	"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
34PIC	"A"	63.73	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00
	"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
32PIC	"A"	60.91	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19
	"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
30PIC	"A"	58.08	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38
	"B"	30	28	26	24	22	20	18	16	14	12	10	8	6	4
	"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	27.66
	"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	33.04
28PIC	"A"	55.25	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57
	"B"	28	26	24	22	20	18	16	14	12	10	8	6	4	2
	"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	26.66	25.25
	"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	30.63
26PIC	"A"	52.42	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76
	"B"	26	24	22	20	18	16	14	12	10	8	6	4	2	0
	"C"	41.21	39.80	38.38	36.97	35.56	34.14	32.73	31.31	29.90	28.49	27.07	25.66	24.25	22.84
	"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	29.21	28.21
24PIC	"A"	49.59	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95
	"B"	24	22	20	18	16	14	12	10	8	6	4	2	0	-2
	"C"	38.80	37.38	35.97	34.56	33.14	31.73	30.31	28.90	27.49	26.07	24.66	23.25	21.84	20.43
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	29.80	28.80	27.80	26.80	25.80
22PIC	"A"	46.77	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14
	"B"	22	20	18	16	14	12	10	8	6	4	2	0	-2	-4
	"C"	36.38	34.97	33.56	32.14	30.73	29.31	27.90	26.49	25.07	23.66	22.25	20.84	19.43	18.02
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38	29.38	28.38	27.38	26.38	25.38	24.38	23.38
20PIC	"A"	43.94	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14	7.33
	"B"	20	18	16	14	12	10	8	6	4	2	0	-2	-4	-6
	"C"	33.97	32.56	31.14	29.73	28.31	26.90	25.49	24.07	22.66	21.25	19.84	18.43	17.02	15.61
	"D"	33.97	32.97	31.97	30.97	29.97	28.97	27.97	26.97	25.97	24.97	23.97	22.97	21.97	20.97
18PIC	"A"	41.11	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14	7.33	4.52
	"B"	18	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8
	"C"	31.56	30.14	28.73	27.31	25.90	24.49	23.07	21.66	20.25	18.84	17.43	16.02	14.61	13.20
	"D"	31.56	30.56	29.56	28.56	27.56	26.56	25.56	24.56	23.56	22.56	21.56	20.56	19.56	18.56
16PIC	"A"	38.28	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14	7.33	4.52	1.71
	"B"	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10
	"C"	29.14	27.73	26.31	24.90	23.49	22.07	20.66	19.25	17.84	16.43	15.02	13.61	12.20	10.79
	"D"	29.14	28.14	27.14	26.14	25.14	24.14	23.14	22.14	21.14	20.14	19.14	18.14	17.14	16.14
14PIC	"A"	35.45	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14	7.33	4.52	1.71	-1.10
	"B"	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12
	"C"	26.73	25.31	23.90	22.49	21.07	19.66	18.25	16.84	15.43	14.02	12.61	11.20	9.79	8.38
	"D"	26.73	25.73	24.73	23.73	22.73	21.73	20.73	19.73	18.73	17.73	16.73	15.73	14.73	13.73
12PIC	"A"	32.63	29.80	27.00	24.19	21.38	18.57	15.76	12.95	10.14	7.33	4.52	1.71	-1.10	-3.30
	"B"	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14
	"C"	24.31	22.90	21.49	20.07	18.66	17.25	15.84	14.43	13.02	11.61	10.20	8.79	7.38	5.97
	"D"	24.31	23.31	22.31	21.31	20.31	19.31	18.31	17.31	16.31	15.31	14.31	13.31	12.31	11.31
10PIC	"A"	29.													

COMPONENTS

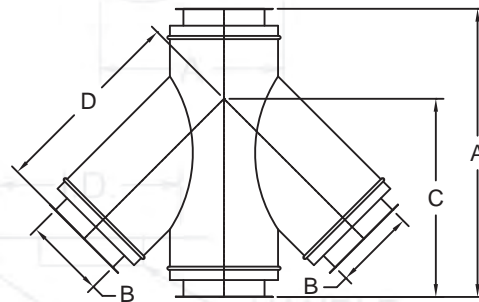
		TAP I.D.														
		48	46	44	42	40	38	36	34	32	30	28	26	24	22	
BODY I.D.	48PIC	"A"	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1357	1310	1290
		"B"	1219	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559
		"C"	1721	1685	1649	1613	1578	1542	1506	1470	1434	1398	1362	1326	1290	1254
		"D"	1721	1696	1671	1645	1620	1594	1569	1544	1518	1493	1467	1442	1417	1391
	46PIC	"A"	46	44	42	40	38	36	34	32	30	28	26	24	22	20
		"B"	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
		"C"	1660	1624	1588	1552	1516	1480	1444	1408	1373	1337	1301	1265	1229	1193
		"D"	1660	1634	1609	1584	1558	1533	1507	1482	1457	1431	1406	1380	1355	1330
	44PIC	"A"	44	42	40	38	36	34	32	30	28	26	24	22	20	18
		"B"	1978	1906	1834	1763	1691	1619	1547	1475	1403	1331	1260	1239	1192	1146
		"C"	1118	1067	1016	965	914	864	813	762	711	660	610	559	508	457
		"D"	1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1240	1203	1168	1132
	42PIC	"A"	42	40	38	36	34	32	30	28	26	24	22	20	18	16
		"B"	1906	1834	1763	1691	1619	1547	1475	1403	1331	1260	1213	1167	1120	1099
		"C"	1067	1016	965	914	864	813	762	711	660	610	559	508	457	406
		"D"	1537	1501	1466	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106	1070
40PIC	"A"	40	38	36	34	32	30	28	26	24	22	20	18	16	14	
	"B"	1834	1763	1691	1619	1547	1475	1403	1331	1260	1188	1141	1095	1074	1032	
	"C"	1016	965	914	864	813	762	711	660	610	559	508	457	406	356	
	"D"	1476	1440	1404	1368	1332	1296	1260	1225	1189	1153	1117	1081	1045	1009	
38PIC	"A"	38	36	34	32	30	28	26	24	22	20	18	16	14	12	
	"B"	1763	1691	1619	1547	1475	1403	1331	1260	1188	1116	1070	1049	1007	981	
	"C"	965	914	864	813	762	711	660	610	559	508	457	406	356	305	
	"D"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091	1056	1020	984	948	
36PIC	"A"	36	34	32	30	28	26	24	22	20	18	16	14	12	10	
	"B"	1691	1619	1547	1475	1403	1331	1260	1188	1116	1044	1023	981	956	909	
	"C"	914	864	813	762	711	660	610	559	508	457	406	356	305	254	
	"D"	1353	1317	1281	1246	1210	1174	1138	1102	1066	1030	994	958	922	886	
34PIC	"A"	34	32	30	28	26	24	22	20	18	16	14	12	10	8	
	"B"	1619	1547	1475	1403	1331	1260	1188	1116	1044	998	956	930	884	837	
	"C"	864	813	762	711	660	610	559	508	457	406	356	305	254	203	
	"D"	1292	1256	1220	1184	1148	1113	1076	1041	1005	969	933	897	861	825	
32PIC	"A"	32	30	28	26	24	22	20	18	16	14	12	10	8	6	
	"B"	1547	1475	1403	1331	1260	1188	1116	1044	972	930	905	859	812	797	
	"C"	813	762	711	660	610	559	508	457	406	356	305	254	203	152	
	"D"	1231	1196	1159	1123	1087	1051	1015	979	943	908	871	836	800	764	
30PIC	"A"	30	28	26	24	22	20	18	16	14	12	10	8	6		
	"B"	1475	1403	1331	1260	1188	1116	1044	972	900	880	833	787	772		
	"C"	762	711	660	610	559	508	457	406	356	305	254	203	152		
	"D"	1169	1134	1098	1062	1026	990	954	918	882	846	810	774	738		
28PIC	"A"	28	26	24	22	20	18	16	14	12	10	8	6			
	"B"	1403	1331	1260	1188	1116	1044	972	900	854	808	761	747			
	"C"	711	660	610	559	508	457	406	356	305	254	203	152			
	"D"	1108	1072	1036	1000	964	929	893	857	821	785	749	713			
26PIC	"A"	26	24	22	20	18	16	14	12	10	8	6				
	"B"	1331	1260	1188	1116	1044	972	900	829	782	736	721				
	"C"	660	610	559	508	457	406	356	305	254	203	152				
	"D"	1047	1011	975	939	903	867	831	795	759	724	688				
24PIC	"A"	24	22	20	18	16	14	12	10	8	6					
	"B"	1260	1188	1116	1044	972	900	829	757	710	696					
	"C"	610	559	508	457	406	356	305	254	203	152					
	"D"	986	949	914	878	842	806	770	734	698	662					
22PIC	"A"	22	20	18	16	14	12	10	8	6						
	"B"	1188	1116	1044	972	900	829	757	707	685	670					
	"C"	559	508	457	406	356	305	254	203	152						
	"D"	924	888	852	816	781	744	709	673	637						
20PIC	"A"	20	18	16	14	12	10	8	6							
	"B"	1116	1044	972	900	829	757	685	613							
	"C"	508	457	406	356	305	254	203	152							
	"D"	863	827	791	755	719	683	647	611							
18PIC	"A"	18	16	14	12	10	8	6								
	"B"	1044	972	900	829	757	685	613								
	"C"	457	406	356	305	254	203	152								
	"D"	802	766	730	694	658	622	586								
16PIC	"A"	16	14	12	10	8	6									
	"B"	972	900	829	757	685	613									
	"C"	406	356	305	254	203	152									
	"D"	740	704	668	632	597	561									
14PIC	"A"	14	12	10	8	6										
	"B"	900	829	757	685	613										
	"C"	356	305	254	203	152										
	"D"	679	643	607	571	535										
12PIC	"A"	12	10	8	6											
	"B"	829	757	685	613											
	"C"	305	254	203	152											
	"D"	617	582	546	510											
10PIC	"A"	10	8	6												
	"B"	757	685	613												
	"C"	254	203	152												
	"D"	556	520	484												
8PIC	"A"	8	6													
	"B"	685	613													
	"C"	203	152													
	"D"	495	459													
6PIC	"A"	6														
	"B"	613														
	"C"	152														
	"D"	434														



2G 45MT & DL TABLE IN METRIC

COMPONENTS

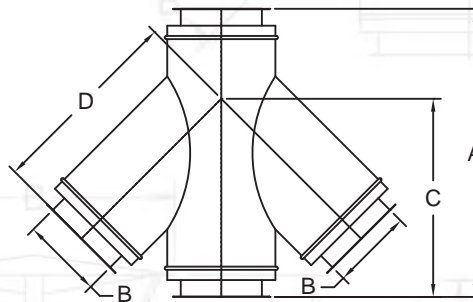
BODY I.D.	TAP I.D.	BODY I.D.									
		36	34	32	30	28	26	24	22	20	18
36PIC	"A"	69.39	66.57	63.74	60.91	58.08	55.25	52.43	49.59	46.76	43.93
	"B"	36	34	32	30	28	26	24	22	20	18
	"C"	55.70	54.28	52.87	51.46	50.04	48.63	47.21	45.80	44.38	42.96
	"D"	55.70	54.70	53.70	52.70	51.70	50.70	49.70	48.70	47.70	46.70
34PIC	"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	"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	24	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	"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	22	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	"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	20	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	"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	18	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	35.63	34.63
24PIC	"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	"A"	49.59	46.76	43.93	41.10	38.27	35.45	32.62	29.79	26.97	26.97
	"B"	22	20	18	16	14	12	10	8	6	6
	"C"	38.80	37.38	35.96	34.55	33.14	31.72	30.31	28.89	27.48	27.48
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	30.80
20PIC	"A"	46.76	43.93	41.10	38.27	35.45	32.62	29.79	26.97	26.97	26.97
	"B"	20	18	16	14	12	10	8	6	6	6
	"C"	36.38	34.96	33.55	32.14	30.72	29.31	27.89	26.48	26.48	26.48
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38	29.38	29.38	29.38
18PIC	"A"	43.93	41.10	38.27	35.45	32.62	29.79	26.97	26.97	26.97	26.97
	"B"	18	16	14	12	10	8	6	6	6	6
	"C"	33.96	32.55	31.14	29.72	28.31	26.89	25.48	25.48	25.48	25.48
	"D"	33.96	32.96	31.96	30.96	29.96	28.96	27.96	27.96	27.96	27.96
16PIC	"A"	41.10	38.27	35.45	32.62	29.79	26.97	26.97	26.97	26.97	26.97
	"B"	16	14	12	10	8	6	6	6	6	6
	"C"	31.55	30.14	28.72	27.31	25.89	24.48	24.48	24.48	24.48	24.48
	"D"	31.55	30.55	29.55	28.55	27.55	26.55	26.55	26.55	26.55	26.55
14PIC	"A"	38.27	35.45	32.62	29.79	26.97	26.97	26.97	26.97	26.97	26.97
	"B"	14	12	10	8	6	6	6	6	6	6
	"C"	29.14	27.72	26.31	24.89	23.48	23.48	23.48	23.48	23.48	23.48
	"D"	29.14	28.14	27.14	26.14	25.14	25.14	25.14	25.14	25.14	25.14
12PIC	"A"	35.45	32.62	29.79	26.97	26.97	26.97	26.97	26.97	26.97	26.97
	"B"	12	10	8	6	6	6	6	6	6	6
	"C"	26.72	25.31	23.89	22.48	22.48	22.48	22.48	22.48	22.48	22.48
	"D"	26.72	25.72	24.72	23.72	23.72	23.72	23.72	23.72	23.72	23.72
10PIC	"A"	32.62	29.79	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97
	"B"	10	8	6	6	6	6	6	6	6	6
	"C"	24.31	22.89	21.48	21.48	21.48	21.48	21.48	21.48	21.48	21.48
	"D"	24.31	23.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31	22.31
8PIC	"A"	29.79	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97
	"B"	8	6	6	6	6	6	6	6	6	6
	"C"	21.89	20.48	20.48	20.48	20.48	20.48	20.48	20.48	20.48	20.48
	"D"	21.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89
6PIC	"A"	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97	26.97
	"B"	6	6	6	6	6	6	6	6	6	6
	"C"	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48
	"D"	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48	19.48



3G 45MT & DL TABLE IN INCHES

COMPONENTS

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
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
32PIC	"A"	1619	1547	1475	1403	1332	1260	1188	1116	1044	930
	"B"	813	762	711	660	609	558	507	456	405	356
	"C"	1292	1256	1220	1184	1148	1113	1076	1040	1005	969
	"D"	1292	1267	1241	1216	1190	1165	1140	1114	1089	1063
30PIC	"A"	1547	1475	1403	1332	1260	1188	1116	1044	972	880
	"B"	762	711	660	610	559	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
28PIC	"A"	1475	1403	1332	1260	1188	1116	1044	972	854	808
	"B"	711	660	610	559	508	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
26PIC	"A"	1403	1332	1260	1188	1116	1044	972	900	782	782
	"B"	660	610	559	508	457	406	356	305	254	203
	"C"	1108	1072	1036	1000	964	928	893	856	821	785
	"D"	1108	1083	1057	1032	1007	981	956	930	904	878
24PIC	"A"	1332	1260	1188	1116	1044	972	900	829	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
22PIC	"A"	1260	1188	1116	1044	972	900	829	757	685	685
	"B"	559	508	457	406	356	305	254	203	152	152
	"C"	986	949	913	878	842	806	770	734	698	698
	"D"	986	960	935	909	884	859	833	808	782	782
20PIC	"A"	1188	1116	1044	972	900	829	757	685	685	685
	"B"	508	457	406	356	305	254	203	152	152	152
	"C"	924	888	852	816	780	744	708	673	637	637
	"D"	924	899	873	848	822	797	772	746	746	746
18PIC	"A"	1116	1044	972	900	829	757	685	685	685	685
	"B"	457	406	356	305	254	203	152	152	152	152
	"C"	863	827	791	755	719	683	647	611	575	575
	"D"	863	837	812	786	761	736	710	710	710	710
16PIC	"A"	1044	972	900	829	757	685	685	685	685	685
	"B"	406	356	305	254	203	152	152	152	152	152
	"C"	801	766	729	694	658	622	586	550	514	514
	"D"	801	776	751	725	700	674	674	674	674	674
14PIC	"A"	972	900	829	757	685	685	685	685	685	685
	"B"	356	305	254	203	152	152	152	152	152	152
	"C"	740	704	668	632	596	560	524	488	452	452
	"D"	740	715	689	664	639	639	639	639	639	639
12PIC	"A"	900	829	757	685	685	685	685	685	685	685
	"B"	305	254	203	152	152	152	152	152	152	152
	"C"	679	643	607	571	535	500	464	428	392	392
	"D"	679	653	628	602	602	602	602	602	602	602
10PIC	"A"	829	757	685	685	685	685	685	685	685	685
	"B"	254	203	152	152	152	152	152	152	152	152
	"C"	617	581	546	510	474	438	402	366	330	330
	"D"	617	592	567	567	567	567	567	567	567	567
8PIC	"A"	757	685	685	685	685	685	685	685	685	685
	"B"	203	152	152	152	152	152	152	152	152	152
	"C"	556	520	520	520	520	520	520	520	520	520
	"D"	556	531	531	531	531	531	531	531	531	531
6PIC	"A"	685	685	685	685	685	685	685	685	685	685
	"B"	152	152	152	152	152	152	152	152	152	152
	"C"	495	495	495	495	495	495	495	495	495	495
	"D"	495	495	495	495	495	495	495	495	495	495



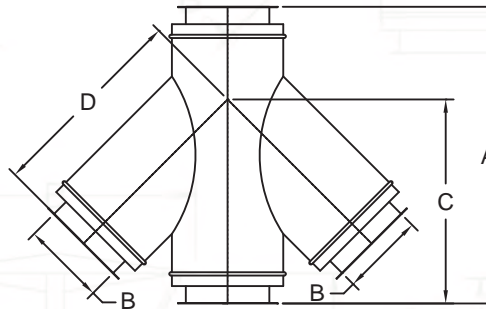
3G 45MT & DL TABLE IN METRIC

COMPONENTS

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
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
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
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
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
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
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
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
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
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
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	32.97
	"B"	28	26	24	22	20	18	16	14	12	10	8	6	4
	"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	31.48
	"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
26PIC	"A"	58.08	55.25	52.42	49.60	46.77	43.94	41.11	38.28	35.46	33.63	32.80	31.97	31.14
	"B"	26	24	22	20	18	16	14	12	10	8	6	4	2
	"C"	46.04	44.63	43.21	41.80	40.38	38.97	37.56	36.14	34.73	33.31	31.90	30.48	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
24PIC	"A"	55.25	52.42	49.60	46.77	43.94	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31
	"B"	24	22	20	18	16	14	12	10	8	6	4	2	0
	"C"	43.63	42.21	40.80	39.38	37.97	36.56	35.14	33.73	32.31	30.90	29.48	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
22PIC	"A"	52.42	49.60	46.77	43.94	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48
	"B"	22	20	18	16	14	12	10	8	6	4	2	0	-2
	"C"	41.21	39.80	38.38	36.97	35.56	34.14	32.73	31.31	29.90	28.48	27.07	25.66	24.25
	"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	29.21
20PIC	"A"	49.60	46.77	43.94	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65
	"B"	20	18	16	14	12	10	8	6	4	2	0	-2	-4
	"C"	38.80	37.38	35.97	34.56	33.14	31.73	30.31	28.90	27.48	26.07	24.66	23.25	21.84
	"D"	38.80	37.80	36.80	35.80	34.80	33.80	32.80	31.80	30.80	29.80	28.80	27.80	26.80
18PIC	"A"	46.77	43.94	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82
	"B"	18	16	14	12	10	8	6	4	2	0	-2	-4	-6
	"C"	36.38	34.97	33.56	32.14	30.73	29.31	27.90	26.48	25.07	23.66	22.25	20.84	19.43
	"D"	36.38	35.38	34.38	33.38	32.38	31.38	30.38	29.38	28.38	27.38	26.38	25.38	24.38
16PIC	"A"	43.94	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82	25.99
	"B"	16	14	12	10	8	6	4	2	0	-2	-4	-6	-8
	"C"	33.97	32.56	31.14	29.73	28.31	26.90	25.48	24.07	22.66	21.25	19.84	18.43	17.02
	"D"	33.97	32.97	31.97	30.97	29.97	28.97	27.97	26.97	25.97	24.97	23.97	22.97	21.97
14PIC	"A"	41.11	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82	25.99	25.16
	"B"	14	12	10	8	6	4	2	0	-2	-4	-6	-8	-10
	"C"	31.56	30.14	28.73	27.31	25.90	24.48	23.07	21.66	20.25	18.84	17.43	16.02	14.61
	"D"	31.56	30.56	29.56	28.56	27.56	26.56	25.56	24.56	23.56	22.56	21.56	20.56	19.56
12PIC	"A"	38.28	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82	25.99	25.16	24.33
	"B"	12	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12
	"C"	29.14	27.73	26.31	24.90	23.48	22.07	20.66	19.25	17.84	16.43	15.02	13.61	12.20
	"D"	29.14	28.14	27.14	26.14	25.14	24.14	23.14	22.14	21.14	20.14	19.14	18.14	17.14
10PIC	"A"	35.46	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82	25.99	25.16	24.33	23.50
	"B"	10	8	6	4	2	0	-2	-4	-6	-8	-10	-12	-14
	"C"	26.73	25.31	23.90	22.48	21.07	19.66	18.25	16.84	15.43	14.02	12.61	11.20	9.79
	"D"	26.73	25.73	24.73	23.73	22.73	21.73	20.73	19.73	18.73	17.73	16.73	15.73	14.73
8PIC	"A"	32.63	31.80	30.97	30.14	29.31	28.48	27.65	26.82	25.99	25.16	24.33	23.50	22.67
	"B"	8	6	4	2									

COMPONENTS

BODY I.D.	TAP 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
46PIC	"A"	46	44	42	40	38	36	34	32	30	28	26	24	22
	"B"	2194	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1382
	"C"	1168	1118	1067	1016	965	914	864	813	762	711	660	610	559
	"D"	1783	1747	1711	1675	1639	1603	1567	1531	1495	1459	1423	1388	1352
44PIC	"A"	44	42	40	38	36	34	32	30	28	26	24	22	20
	"B"	2122	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1357	1311
	"C"	1118	1067	1016	965	914	864	813	762	711	660	610	559	508
	"D"	1721	1685	1649	1614	1578	1542	1506	1470	1434	1398	1362	1326	1290
42PIC	"A"	42	40	38	36	34	32	30	28	26	24	22	20	18
	"B"	2050	1978	1906	1834	1763	1691	1619	1547	1475	1403	1331	1285	1264
	"C"	1067	1016	965	914	864	813	762	711	660	610	559	508	457
	"D"	1660	1624	1588	1552	1516	1480	1444	1408	1373	1337	1301	1265	1229
40PIC	"A"	40	38	36	34	32	30	28	26	24	22	20	18	16
	"B"	1978	1906	1834	1763	1691	1619	1547	1475	1403	1331	1260	1239	1192
	"C"	1016	965	914	864	813	762	711	660	610	559	508	457	406
	"D"	1599	1563	1527	1491	1455	1419	1383	1347	1311	1275	1240	1203	1168
38PIC	"A"	38	36	34	32	30	28	26	24	22	20	18	16	14
	"B"	1906	1834	1763	1691	1619	1547	1475	1403	1331	1260	1213	1167	1120
	"C"	965	914	864	813	762	711	660	610	559	508	457	406	356
	"D"	1537	1501	1466	1430	1394	1358	1322	1286	1250	1214	1178	1142	1106
36PIC	"A"	36	34	32	30	28	26	24	22	20	18	16	14	12
	"B"	1834	1763	1691	1619	1547	1475	1403	1331	1260	1188	1141	1095	1074
	"C"	914	864	813	762	711	660	610	559	508	457	406	356	305
	"D"	1476	1440	1404	1368	1332	1296	1261	1225	1189	1153	1117	1081	1045
34PIC	"A"	34	32	30	28	26	24	22	20	18	16	14	12	10
	"B"	1763	1691	1619	1547	1475	1403	1331	1260	1188	1116	1070	1049	1002
	"C"	864	813	762	711	660	610	559	508	457	406	356	305	254
	"D"	1415	1379	1343	1307	1271	1235	1199	1163	1127	1091	1056	1020	984
32PIC	"A"	32	30	28	26	24	22	20	18	16	14	12	10	8
	"B"	1691	1619	1547	1475	1403	1331	1260	1188	1116	1044	1023	977	930
	"C"	813	762	711	660	610	559	508	457	406	356	305	254	203
	"D"	1353	1317	1281	1246	1210	1174	1138	1102	1066	1030	994	958	922
30PIC	"A"	30	28	26	24	22	20	18	16	14	12	10	8	6
	"B"	1619	1547	1475	1403	1331	1260	1188	1116	1044	998	951	905	884
	"C"	762	711	660	610	559	508	457	406	356	305	254	203	152
	"D"	1292	1256	1220	1184	1148	1113	1076	1041	1005	969	933	897	861
28PIC	"A"	28	26	24	22	20	18	16	14	12	10	8	6	6
	"B"	1547	1475	1403	1331	1260	1188	1116	1044	972	926	880	859	859
	"C"	711	660	610	559	508	457	406	356	305	254	203	152	152
	"D"	1231	1195	1159	1123	1087	1051	1015	979	943	908	871	836	836
26PIC	"A"	26	24	22	20	18	16	14	12	10	8	6	6	6
	"B"	1475	1403	1331	1260	1188	1116	1044	972	901	854	833	833	833
	"C"	660	610	559	508	457	406	356	305	254	203	152	152	152
	"D"	1169	1134	1098	1062	1026	990	954	918	882	846	810	774	738
24PIC	"A"	24	22	20	18	16	14	12	10	8	6	6	6	6
	"B"	1403	1331	1260	1188	1116	1044	972	901	829	808	808	808	808
	"C"	610	559	508	457	406	356	305	254	203	152	152	152	152
	"D"	1108	1072	1036	1000	964	929	893	857	821	785	749	713	677
22PIC	"A"	22	20	18	16	14	12	10	8	6	6	6	6	6
	"B"	1331	1260	1188	1116	1044	972	901	829	757	757	757	757	757
	"C"	508	457	406	356	305	254	203	152	152	152	152	152	152
	"D"	1047	1011	975	939	903	867	831	795	759	723	687	651	615
20PIC	"A"	20	18	16	14	12	10	8	6	6	6	6	6	6
	"B"	1260	1188	1116	1044	972	901	829	757	757	757	757	757	757
	"C"	508	457	406	356	305	254	203	152	152	152	152	152	152
	"D"	986	949	914	878	842	806	770	734	698	662	626	590	554
18PIC	"A"	18	16	14	12	10	8	6	6	6	6	6	6	6
	"B"	1188	1116	1044	972	901	829	757	757	757	757	757	757	757
	"C"	457	406	356	305	254	203	152	152	152	152	152	152	152
	"D"	924	888	852	816	781	744	709	673	637	601	565	529	493
16PIC	"A"	16	14	12	10	8	6	6	6	6	6	6	6	6
	"B"	1116	1044	972	901	829	757	757	757	757	757	757	757	757
	"C"	406	356	305	254	203	152	152	152	152	152	152	152	152
	"D"	863	827	791	755	719	683	647	611	575	539	503	467	431
14PIC	"A"	14	12	10	8	6	6	6	6	6	6	6	6	6
	"B"	1044	972	901	829	757	757	757	757	757	757	757	757	757
	"C"	356	305	254	203	152	152	152	152	152	152	152	152	152
	"D"	802	766	730	694	658	622	586	550	514	478	442	406	370
12PIC	"A"	12	10	8	6	6	6	6	6	6	6	6	6	6
	"B"	972	901	829	757	757	757	757	757	757	757	757	757	757
	"C"	305	254	203	152	152	152	152	152	152	152	152	152	152
	"D"	740	704	668	632	596	560	524	488	452	416	380	344	308
10PIC	"A"	10	8	6	6	6	6	6	6	6	6	6	6	6
	"B"	901	829	757	757	757	757	757	757	757	757	757	757	757
	"C"	254	203	152	152	152	152	152	152	152	152	152	152	152
	"D"	679	643	607	571	535	499	463	427	391	355	319	283	247
8PIC	"A"	8	6	6	6	6	6	6	6	6	6	6	6	6
	"B"	829	757	757	757	757	757	757	757	757	757	757	757	757
	"C"	203	152	152	152	152	152	152	152	152	152	152	152	152
	"D"	617	582	546	510	474	438	402	366	330	294	258	222	186
6PIC	"A"	6	6	6	6	6	6	6	6	6	6	6	6	6
	"B"	757	757	757	757	757	757	757	757	757	757	757	757	757
	"C"	152	152	152	152	152	152	152	152	152	152	152	152	152
	"D"	556	520	484	448	412	376	340	304	268	232	196	160	124



4G 45MT & DL TABLE IN METRIC

DESIGN CHECKLIST

In order to quickly and accurately design a Grease Duct system, Metal-Fab's Application 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, or plans that are to scale, that 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.

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



800-835-2830