

DRAWING STANDARDS

DRAWINGS SHOULD BE MADE ON A1 OR A2 SIZE SHEET TO A SCALE OF NOT LESS THAN 1:50. DETAILS SHOULD BE TO A SCALE OF AT LEAST 1:25 TO ENSURE ADEQUATE CLARITY.

EACH DRAWING SHOULD INDICATE THE FOLLOWING AS A MINIMUM STANDARD:

- THE NAME OF THE DUCT SERVICE AND THE DIRECTION OF AIRFLOW. NOTE THAT PIECE NUMBERING SHOULD ALWAYS BE IN THE DIRECTION OF AIRFLOW.
- THE DUCT CONSTRUCTION STANDARD (PRESSURE FILE) AND SEAL CLASS.
- PRESSURE TESTING REQUIREMENTS (IF ANY).
- PIECE IDENTIFICATION WITH A NAME & NUMBER THAT IS BOTH UNIQUE TO THAT SYSTEM AND SEQUENTIAL. PIECE NUMBERING SHOULD ALWAYS BE IN THE DIRECTION OF AIRFLOW. OPTIONS FOR IDENTIFICATION ARE AS FOLLOWS:
 - SKETCH NAME MAXIMUM OF 12 CHARACTERS (E.G. AHU 6)
 - PIECE NAME MAXIMUM OF 4 CHARACTERS (E.G. SA)
 - PIECE NUMBER SEQUENTIAL (E.G. 19)
 NUMBERING OF PIECES WITH LETTERS IS NOT POSSIBLE, AND MUST BE AVOIDED. TAKE-OFFS (EXCLUDING SPIGOTS) SHOULD BE GIVEN A SEPARATE PIECE NUMBER FROM THE DUCT TO WHICH THEY CONNECT.
- SITE MEASURE AND TRIM ON SITE PIECES SUITABLY PLACED TO FACILITATE THE INSTALLATION. TO SPEED MANUFACTURE AND INSTALLATION, SITE MEASURE PIECES SHOULD BE KEPT TO A MINIMUM. THE USE OF TRIM ON SITE PIECES IS PREFERABLE.
- ALL DIMENSIONS ARE TO BE OVERALL SHEETMETAL SIZES. MARK OA (OVERALL) OR AS (AIRSTREAM) WHERE CONFUSION MAY OCCUR (E.G. AT CONNECTIONS TO PROPRIETARY EQUIPMENT).
- DUCTS DIMENSIONED WITH THE FIRST VIEW X THE OTHER VIEW. UNITS SHALL BE MILLIMETRES.
- THE LENGTH OF EACH PIECE.
- THE INTERNAL INSULATION TYPE AND THICKNESS (WHERE REQUIRED).
- FITTING PARTICULARS (OFFSETS, BEND RADII, BEND ANGLES, THROAT LENGTHS, TURNING VANE & SPLITTER REQUIREMENTS, SPIGOT SIZES & POSITION, DAMPERS ETC.).
- CONNECTION DETAILS FOR PROPRIETARY ITEMS OF PLANT AND EQUIPMENT.

DRAWING LEGEND

EQUIPMENT	DESCRIPTION
AP	ACCESS PANEL
BD	BUTTERFLY DAMPER
FD	FIRE DAMPER
MD	MOTORISED DAMPER
SC	SMOKE CONTROL DAMPER
SD	SPLITTER DAMPER
VC	VOLUME CONTROL DAMPER
CONNECTIONS	DESCRIPTION
BE	BLANK END
C	C-CLEAT JOINT
LF	LOOSE FLANGE
M	MEZ FLANGE JOINT
OE	OPEN END
RE	RAW EDGE
S	S-CLEAT JOINT
S&D	SLIP & DRIVE JOINT
SF	SHEETMETAL FLANGE
TRANSITION PIECES	DESCRIPTION
MOS	MEASURE ON SITE
TOS	TRIM ON SITE
EQUIPMENT	DESCRIPTION
BL	BOTTOM LEVEL
BSD	BOTTOM SET DOWN (DIMENSION & AIRFLOW DIRECTION REQ'D)
BSU	BOTTOM SET UP (DIMENSION & AIRFLOW DIRECTION REQ'D)
ET	EQUAL TAPER
FA	FROM ABOVE
FB	FROM BELOW
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FTS	FLAT THIS SIDE
SD	SET DOWN (DIMENSION & AIRFLOW DIRECTION REQ'D)
SU	SET UP (DIMENSION & AIRFLOW DIRECTION REQ'D)
TA	TO ABOVE
TB	TO BELOW
TL	TOP LEVEL
TSO	TOP SET DOWN (DIMENSION & AIRFLOW DIRECTION REQ'D)
TSU	TOP SET UP (DIMENSION & AIRFLOW DIRECTION REQ'D)

SMACNA 2005 PRESSURE FILES (CONDENSED)

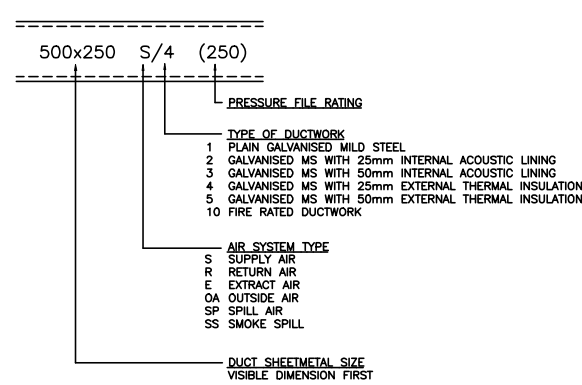
250Pa (1"wg) PRESSURE FILE

DUCT SIZE	DUCT GAUGE	JOINT	COMMENTS
0 to 500	0.6 (24G)	FLAT SLIP OR DRIVE	
501 to 1050	0.6 (24G)	TDC	
1051 to 1800	0.8 (22G)	TDC	
1801 to 2400	1.0 (20G)	TDC	
2401 to 3000	1.2 (18G)	TDC	
3001 & ABOVE	1.2 (18G)	TDC	

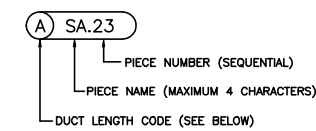
500Pa (2"wg) PRESSURE FILE

DUCT SIZE	DUCT GAUGE	JOINT	COMMENTS
0 to 400	0.6 (24G)	FLAT SLIP OR DRIVE	
401 to 750	0.6 (24G)	TDC	
751 to 1500	0.8 (22G)	TDC	
1501 to 2400	1.0 (20G)	TDC	
2401 to 3000	1.2 (18G)	TDC	
3001 & ABOVE	1.2 (18G)	TDC	

DUCT SIZE



DUCT TAG NUMBERING



DUCT LENGTH CODE

CODE	DUCT TYPE	LENGTH	CONNECTION 1	CONNECTION 2	NOTES
A	STRAIGHT	1430	TDC	TDC	
B	STRAIGHT	1405	TDC	TDC	25 STEP IN FOR INSULATION
C	STRAIGHT	1380	TDC	TDC	50 STEP IN FOR INSULATION
D	STRAIGHT	1500	FLAT DRIVE	FLAT DRIVE	
E	STRAIGHT	1475	FLAT DRIVE	FLAT DRIVE	25 STEP IN FOR INSULATION
F	STRAIGHT	1450	FLAT DRIVE	FLAT DRIVE	50 STEP IN FOR INSULATION
G	STRAIGHT	1478	TDC	RAW EDGE	
H	STRAIGHT	1453	TDC	RAW EDGE	25 STEP IN FOR INSULATION
I	STRAIGHT	1428	TDC	RAW EDGE	50 STEP IN FOR INSULATION
J	STRAIGHT	1512	FLAT DRIVE	RAW EDGE	
K	STRAIGHT	1487	FLAT DRIVE	RAW EDGE	25 STEP IN FOR INSULATION
L	STRAIGHT	1462	FLAT DRIVE	RAW EDGE	50 STEP IN FOR INSULATION
N	OFFSET	1200			
O	OFFSET	600			
P	OFFSET	601 TO 1199			
Q	RADIUS BEND	SHORT RADIUS	R=0.25 x DUCT WIDTH		QUOTE ANGLE IF NOT 90°
R	RADIUS BEND	MEDIUM RADIUS	R=0.50 x DUCT WIDTH		QUOTE ANGLE IF NOT 90°
S	RADIUS BEND	LONG RADIUS	R=DUCT WIDTH		QUOTE ANGLE IF NOT 90°
T	TRANSITION	1200			INCLUDES SQUARE TO ROUND
U	TRANSITION	600			INCLUDES SQUARE TO ROUND
V	TRANSITION	601 TO 1199			INCLUDES SQUARE TO ROUND
W	SQUARE ELBOW	150 THROAT			QUOTE ANGLE IF NOT 90°
X	MISCELLANEOUS				ANY OTHER TYPE OF DUCT

STANDARD ACCESS PANELS

BULLOCK MODEL	NOMINAL ACCESS SIZE	PLAIN DUCT ACCESS SIZE	INSULATED DUCT ACCESS SIZE	OVERALL OUTSIDE SIZE
AP0	FULL ACCESS ENTRY	608 x 463	654 x 500	699 x 548
AP1	TORSO ENTRY	463 x 327	505 x 373	548 x 418
AP2	TWO HANDED ENTRY	332 x 198	380 x 245	422 x 286
AP3	SINGLE HANDED ENTRY	206 x 116	245 x 155	288 x 195

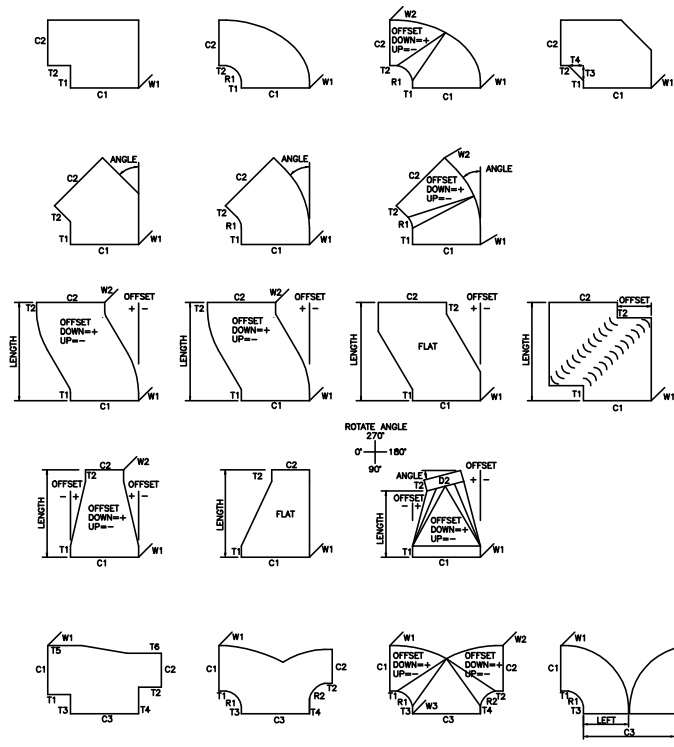
* STANDARD SIZE *

REFER TO COOKE INDUSTRIES DUCTWORK MANUAL FOR FURTHER INFORMATION & DETAILS

STANDARD FITTING DETAILS

THE FOLLOWING SKETCHES SET OUT COOKE STANDARD DUCT & FITTING DETAILS. THE NECESSARY DESIGNER INFORMATION REQUIRED SUCH AS OVERALL DUCT SIZE, PIECE LENGTH, THROAT LENGTHS, OFFSETS, BEND ANGLES & RADII SHOULD BE SHOWN ON THE DRAWING. THE STANDARD FITTING DIMENSIONS SHOWN BELOW REPRESENT THE MINIMUM PRACTICAL LENGTH REQUIRED TO FORM SEAMS AND FIT FLANGES.

FURTHER FITTINGS TYPES & STYLES SUCH AS CROSS TEES, DROP BEAM OFFSETS, AND ROUND & OVAL FITTINGS ARE AVAILABLE. PLEASE REFER TO OUR DUCTWORK MANUAL FOR ADDITIONAL DETAILS.



90° ELBOWS & BENDS
 SQUARE THROAT & RADIUS HEEL
 RADIUS THROAT & HEEL
 SQUARE THROAT & HEEL
 RADIUS THROAT & SQUARE HEEL
 MITRED THROAT & SQUARE HEEL
 SQUARE THROAT & MITRED HEEL
 MITRED THROAT & HEEL
 DROP CHEEK RADIUS BEND

STANDARD THROAT T=150mm
 STANDARD THROAT RADIUS R=150mm
 MINIMUM DROP CHEEK RADIUS R=0.5 x WIDTH

NON 90° ELBOWS & BENDS
 SQUARE THROAT & RADIUS HEEL
 RADIUS THROAT & HEEL
 SQUARE THROAT & HEEL
 RADIUS THROAT & SQUARE HEEL
 DROP CHEEK RADIUS BEND

STANDARD THROAT T=150mm
 STANDARD THROAT RADIUS R=150mm
 MINIMUM DROP CHEEK RADIUS R=0.5 x WIDTH

OFFSETS
 DOUBLE RADIUS TRANSITIONING OFFSET
 SINGLE RADIUS TRANSITIONING OFFSET
 JOGGED STRAIGHT OFFSET
 DOGLEG STRAIGHT OFFSET

STANDARD THROAT T=50mm
 STANDARD LENGTH L=600 OR 1200
 MAXIMUM PRACTICAL LENGTH L=1350

TRANSITIONS
 FOUR PIECE TRANSITION
 TWO PIECE TRANSITION
 SQUARE TO ROUND

STANDARD THROAT T=50mm
 STANDARD COLLAR T=75mm
 STANDARD LENGTH L=600 OR 1200
 MAXIMUM PRACTICAL LENGTH L=1350

TEES
 SQUARE THROAT & RADIUS HEEL
 RADIUS THROAT & HEEL
 SQUARE THROAT & HEEL
 RADIUS THROAT & SQUARE HEEL
 DROP CHEEK RADIUS

STANDARD THROAT T=150mm
 MINIMUM THROAT RADIUS R=150mm
 TEES MAY BE NESTED FITTINGS (FIG 4)
 MINIMUM DROP CHEEK RADIUS R=0.5 x WIDTH

GOOSENECKS
 SQUARE THROAT (90° to 180°)
 RADIUS THROAT (90° to 180°)

STANDARD THROAT T=150mm
 MINIMUM THROAT RADIUS R=150mm
 STANDARD OUTLET SIZE C2=C1 x 125%

INCREASED AREA TAKEOFFS
 SQUARE THROAT
 RADIUS THROAT

STANDARD THROAT T=50mm
 THROAT T2 ATTACHES TO DUCT
 STANDARD ANGLE = 45°

Y BRANCHES
 SQUARE THROAT & RADIUS HEEL
 RADIUS THROAT & HEEL
 SQUARE THROAT & HEEL
 RADIUS THROAT & SQUARE HEEL
 DROP CHEEK RADIUS

STANDARD THROAT T=150mm
 MINIMUM THROAT RADIUS R=150mm
 WYES MAY BE NESTED FITTINGS (FIG 3)
 MINIMUM DROP CHEEK RADIUS R=0.5 x WIDTH

DIFFUSER & GRILLE BOOTS
 SIDE ENTRY DIFFUSER BOOT (C/W 25mm INSULATION)
 SIDE ENTRY GRILLE BOOT (PLAIN OR 13mm INSULATION)
 TOP ENTRY GRILLE BOOT (PLAIN)

FIRE DAMPER SLEEVES
 TYPE A (BLADES IN AIR STREAM)
 TYPE B (BLADES OUTSIDE AIR STREAM)
 TYPE A (WALL GRILLE MOUNTING DETAIL)

INSULATION STEP IN

SYMBOL LEGEND
 C DUCT DIMENSION (IN VIEW)
 W DUCT DIMENSION (NOT SEEN)
 T THROAT
 R RADIUS

Revision	Details	Drawn	Date
D	SMACNA Pressure Files Updated	DDC	10/07
C	SMACNA Pressure Files Updated	AWC	09/98
B	Duct Numbering Added	AWC	05/98
A	SMACNA Pressure Files Updated	AWC	04/96

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Title: **DUCTWORK DETAILING STANDARDS**

Drawn:	Scale:	Drawing No:
AWC	NTS	
Date: 02/03/93	Original Size: A1	
Checked: TW		File Ref:
Date: 05/05/98		Standard_details.dwg
		Revision: C