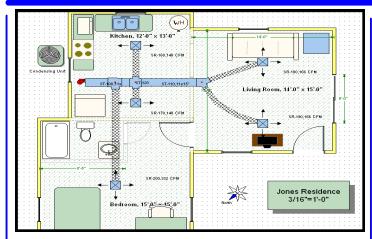
Elite Software

Manual D Ductsize

2700 Arrington Road

College Station, Texas 77845

(800) 648-9523



MANUAL D DUCTSIZE OVERVIEW

The Elite Software graphic Manual D Ductsize program quickly calculates optimal duct sizes using ACCA's 3rd edition Manual D duct design procedures. Elite Software's RHVAC and Drawing Board software is required to use graphic Manual D Ductsize which is not to be confused with the tabular Manual D Ductsizer tool built into RHVAC that uses a non-graphic tabular data entry system. Besides calculating duct sizes, duct system total pressure drop is also calculated such that the required fan static pressure can be compared to the available static pressure of the equipment available. Both supply and return duct systems can be designed. Detailed reports show velocity and pressure losses throughout the system as well as equivalent feet of length for each fitting in the duct system. A bill of materials report complete with material and labor costs can also be obtained if used with Elite Software's Bill of Material program. All common types of duct materials can be drawn and calculated for such as fiberglass duct board, galvanized steel, aluminum, and flex duct. All the fittings from ACCA Manual D are built-into the software. The software can automatically assign fittings or let you specify them. The fitting selector displays hundreds of these fittings for quick and easy selection. These diffusers and registers can be shown with their model numbers along with flow direction arrows in any combination desired. Manual D Ductsize is setup to work with both conventional duct and high velocity duct systems like Unico and SpacePak at no additional charge. The software allows virtually unlimited number of duct sections. Diversity of flow in trunks ducts used in VAV type systems can also be accounted for. Using the duct height and width constraints to control sizes, Manual D Ductsize can also be used to troubleshoot existing systems. You can easily find out which duct section is the bottleneck and evaluate the effects of upsizing only the problem duct sections.

DEMONSTRATION VERSION

A functional demonstration version of Manual D Ductsize can be downloaded free of charge from Elite's web site, **www.elitesoft.com**. Manual D Ductsize is an application program contained within Elite's RHVAC program and requires both RHVAC and Drawing Board. Downloading the demo of RHVAC also provides demos of Drawing Board, Bill of Materials, Proposal Maker and Manual D Ductsize.

MANUAL D DUCTSIZE FEATURES

- Calculates Optimal Air Conditioning Duct Sizes Directly from Drawings Created with RHVAC and Drawing Board
- ACCA Approved with Manual D Sizing Procedures
- Computes Round and/or Rectangular Duct Sizes
- Calculates for both Supply and Return Systems
- Calculates Cumulative Static Pressure Losses
- Allows for all Types of Duct Materials
- Sizes Conventional Duct & High Velocity Unico Duct
- Contains All Fittings in ACCA's Manual D
- Automatically Draws and Connects Runout Ducts
- Works with Elite's Bill of Materials Software
- Analyzes and Troubleshoots Existing Duct Systems
- No Copy Protection Hassles—No Annual Fees

CALCULATION METHOD

The graphic Manual D Ductsize Program is based on the design procedures given in the latest 3rd edition of ACCA's Manual D and is ACCA approved. The equal friction sizing method is used to determine optimal duct sizes to the nearest inch or centimeter. You can select to size ducts based on a user-defined schedule of sizes or to the nearest whole size. A Presize option is available where you enter existing sizes of a duct system so that the software can evaluate existing. Static pressure losses resulting from fittings and dampers are based on Manual D's equivalent length definitions based on the several hundred fittings definitions from Manual D built in to the program, including pictures.

PROGRAM INPUT

Manual D Ductsize is a graphic based design application program. It requires that you already own Elite's RHVAC and Drawing Board software. The primary input data for Manual D Ductsize is obtained by drawing duct system objects such as the air handler/furnace location and the main trunk duct. Once a fan location is given and the route of the main trunk duct is indicated, Manual D Ductsize can automatically draw and attach runout ducts such that a compete duct system is automatically created and sized. Any duct section already created can be modified as desired; lengthen it, bend it, even change the material type. New duct sections can be added individually as needed. Any duct section can be have its own information such as height and width constraints, velocity constraints, material type (duct board, galvanized steel, aluminum, flex duct, etc.), and roughness factor. Manual D fittings are automatically selected for you as the duct system is created, but it is easy to override and select your own preferred fittings. Manual D Ductsize has built-in defaults to work with either conventional duct systems or with the small 2" high velocity duct systems made popular by Hi-Velocity, Unico and SpacePak, Manual D Ductsize knows all the common rules for duct design needed in both conventional and high velocity duct systems.

SYSTEM REQUIREMENTS

Manual D Ductsize requires Windows 2000 or higher. Full copies of RHVAC and Drawing Board software are required to be purchased before graphic Manual D Ductsize can work.

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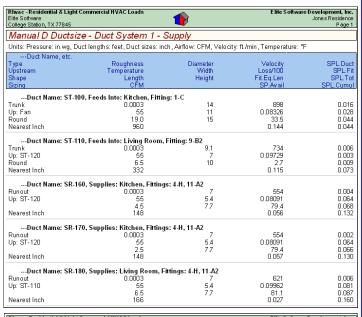
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PROGRAM OUTPUT

The output of the Manual D Ductsize program is both graphic and text based. Nice drawings with title blocks and borders show the floor plan and ductwork layouts. The sizing reports include trunk and runout duct calculations and a system summary report. The trunk and runout data lists all data needed to manually verify the sizing results. Printed for each duct section are size, air cfm, velocity, fitting names and equivalent feet, and static pressure loss. In addition, the velocity, static and total pressure are printed both on a cumulative basis and on a per duct section basis. The runout duct where the greatest total system static pressure loss occurs is clearly identified. The comprehensive color reports can be printed, previewed on screen, saved to disk or created as an HTML or RTF file.



Rhvac - Residential & Light Commercial HVAC Loads Elite Software College Station, TX 77845	1		Elite Software Development, Inc. Jone's Residence Page 2
Manual D Ductsize - Duct System 1 -	Supply (co	nt'd)	
Summary Main trunk airflow:	960		
Largest trunk diameter: Largest runout diameter: Smallest trunk diameter: Smallest runout diameter:	14 9 9.1 7	ST-100 SR-200 ST-110 SR-160	
Runout maximum cumulative static pressure loss: Longest total effective length (ft.):	0.188 199.6	SR-190 SR-190	
Supply fan device pressure losses: Supply fan external static pressure:	0.000 0.188		
Rhvac - Residential & Light Commercial HVAC Loads	<u> </u>		Elite Software Development, Inc.

Path :	t Static Pressu				0.000		Total Path SP	
⊢atn								L0SS: U.444
ltem	Type Description	Flow Fit/Misc Duct Ref	Length Des.Loss Shape	Sizing Opt Min.Hei Min.Vel	Rough. Max.Hei Max.∀el	Calc.Dia Calc.Wid Calc.Hei	Calc.∀el Loss/100 Equiv.Len	SP Loss Subtotal
1	Misc Equipment	0.3 Below						0.300
2	Duct Main Trunk	669	0.080 Rect	Inch 0 0	0.0003 0 0	12.4 10 13	793 0.076	0.004 0.304
3	Fitting Fitting 1-F1	1-F1 Above					793 0.076 98.16	0.075 0.378
4	Duct To Living and Kitchen	472	16 0.080 Rect	Inch O O	0.0003 0 0	10.7 8 12	762 0.085	0.014 0.392
5	Fitting Fitting 9-A1	9-A1 Above					762 0.085 53.77	0.046 0.438
6	Duct Runout R-100	107	0.080 Rnd	Inch O O	0.01 0 0	7 5.4 7.7	400 0.082	0.007 0.444
⊃ath:				m: 4, Ups.Loss	: 0.392		Total Path SP	Loss: 0.423
1	Duct Trunk to Kitchen	152	0.080 Rect	Inch 0 0	0.0003 0 0	6.9 5 8	591 0.093	0.010 0.402
2	Fitting Fitting 9-A1	9-A1 Below					387 0.095 12.46	0.012 0.414
3	Duct Runout R-700	76	9 0.080 Rnd	Inch 0	0.01 0	6 4.7 6.6	387 0.095	0.009

SAMPLE FITTINGS

