

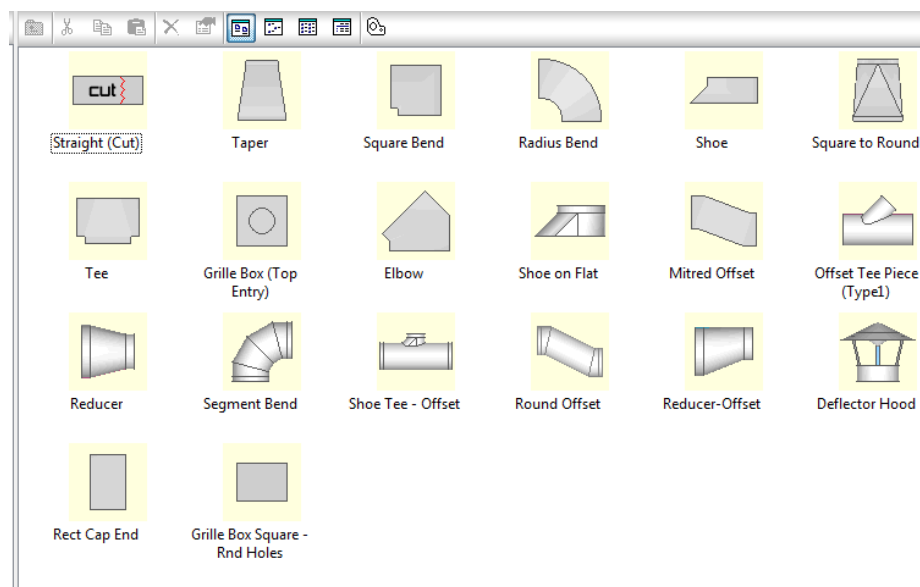
# Job Import Tool

## 1. Order Processing within CAMduct

Our Job Import Tool option allows you to accept inputs from other systems such as ERP, Excel files, 3<sup>rd</sup> Part CAD drawings to produce a job of items for ready and configured for manufacturing.

Attributes such as Specification, Material and Quantities can be sent to the conversion tool from these alternative systems. Connectors, Seams and Airturns etc can also be allocated if different to the automatic assignment of the active Specification: - DW144, SMACNA....

The CAMduct software application comprises of Libraries of Ductwork Pattern Templates that can be customized and organised by the Manufacturer into **Windows Folders**. Each Pattern Template has a **Pattern No.** which defines the Shape of the Pattern. A List of required Dimensions and Options can be entered to determine its overall Developments.

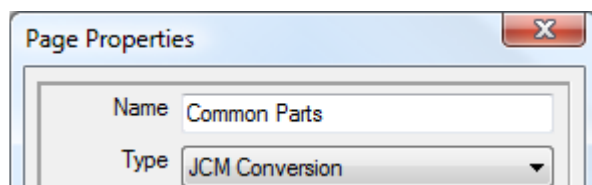


Patterns can be configured with preset dimensions or attributes ready for the import file to automatically assign the unique values that are required, such as Width, Depth, Length, Specification, Materials etc.

The patterns can be placed into a folder structure of your choice so long as the overarching folder attribute is set to "JCM Conversion".

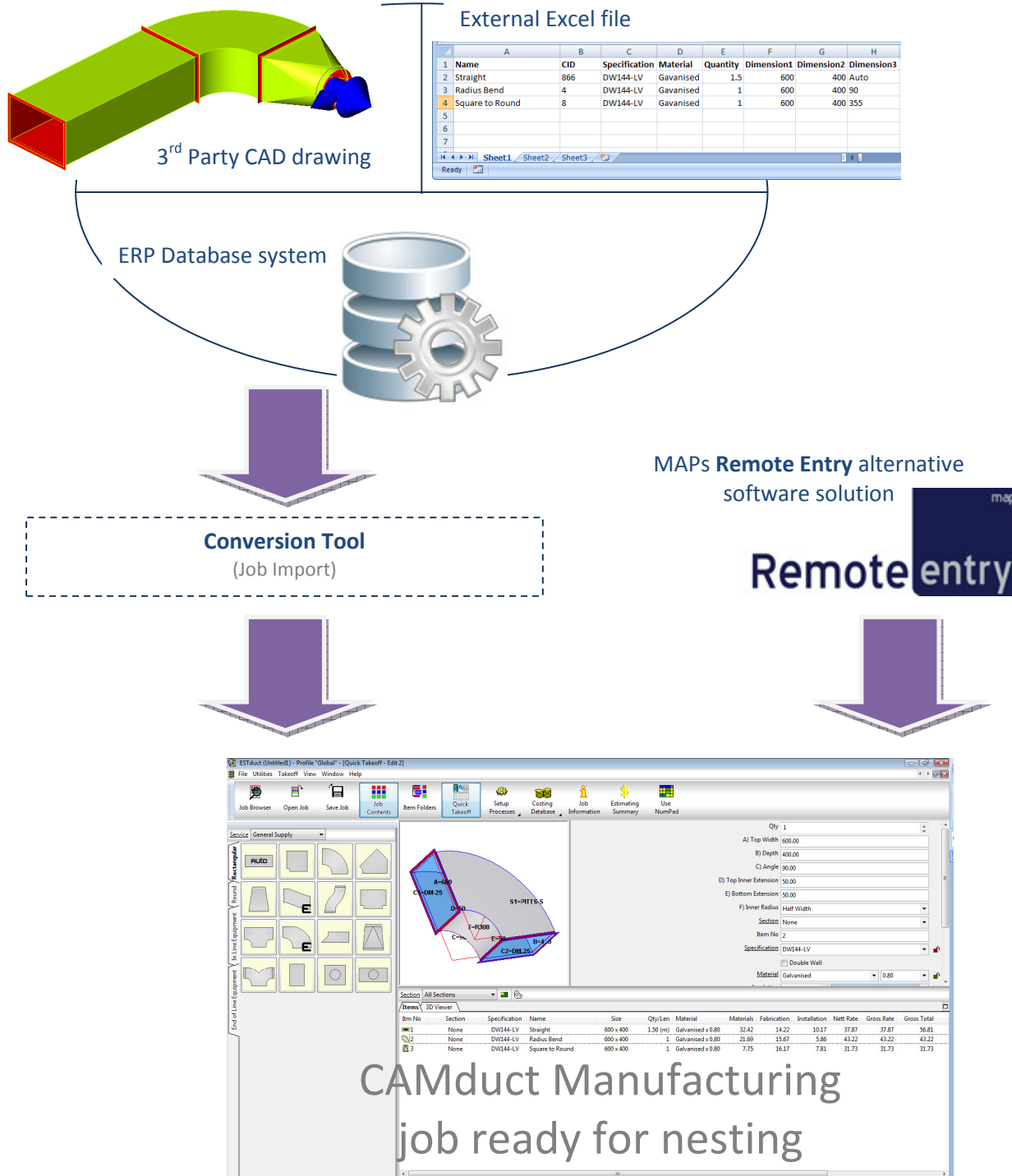
Some manufacturers may like to have customer specific folders as the patterns may require different attributes on the items or variant costing details assigned.

Right Click on the highest level folder where the patterns are all contained and click Properties of the folder as shown in the example below for the Common Parts folder. The master system should have the JCM Conversion folder assigned ready for when the import occurs.



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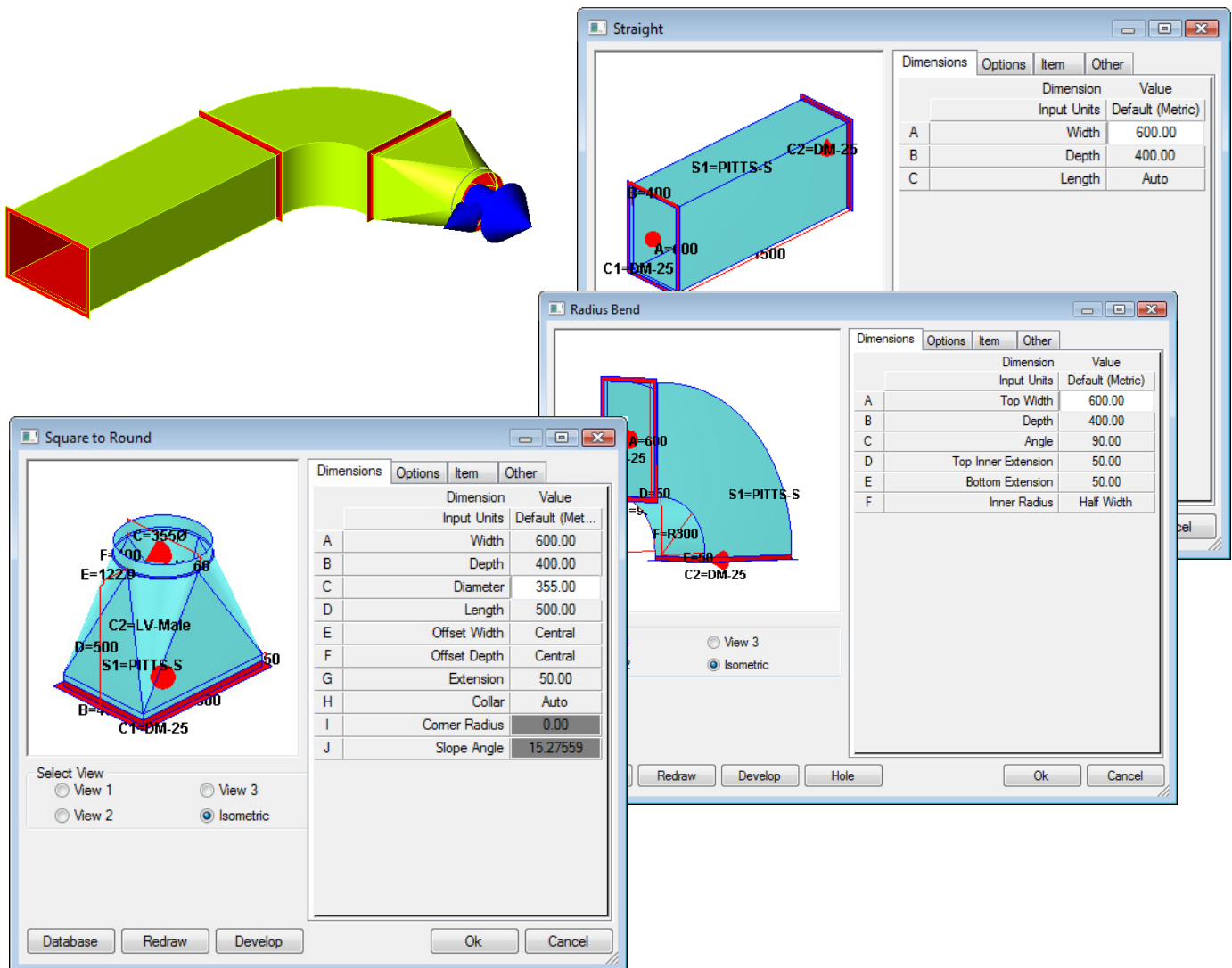
Autodesk®



## 2. ASCII File Breakdown

Each Dimension of an item can be processed along with Specification, Material, Pattern options etc. The Specification will determine Gauge, Standard Straight length, Connectors, Seams, Supports, Stiffening requirements etc which can be setup on the master system ready for the import file.

See Appendix A for Job Information breakdown of the ASCII file and Appendix B for an Item breakdown.



Dimensions are specified from the source whether this is from a CAD package, Excel import or ERP system. Appendix C details an example of the above duct pieces and how they should be processed. The example identifies the format which is required for the conversion and also specifies the validation for selecting dimension fields such as the Offset Width of a Square to Round "Central".

# Job Import Tool

## Appendix A – Job details defined

**Key:** For readability we have added the color symbol that should be taken out when creating the conversion file.

\* = When allocated denotes the field as a requirement.

### JOB\_START \*

#### JOBHEADER\_START\*

##### JOB\_NAME (type = FILENAME)

If not supplied the Job Name will be UNTITLEDXXX where XXX is the first available number that creates a Job that does not already exist in the current project area.

##### JOB\_REFERENCE (type = TEXT)

A reference name for the Job

##### JOB\_DATE (JOB\_DATE, type = TEXT)

Note that the software does NOT check that this is a valid date entry.

##### COMPANYADDRESS\_START (type = TEXT)

Enter address is applicable.

##### COMPANYADDRESS\_END

##### CUSTOMERADDRESS\_START (type = TEXT)

Enter address is applicable.

##### CUSTOMERADDRESS\_END

##### PROJECTAREA\_START (type = FILENAME)

A list of folders that form the path to the folder in which the Job will be created.

The root folder is the default Project Area set up on the Master system.

For example, if this section contained the entries

CUSTOMERA

FLOOR2

ROOM3

and the Job Name was set to F2-R3 and the default Project Area on the Master System was

C:\CAM\DRAWINGS, then the Job would be saved as

C:\CAM\DRAWINGS\CUSTOMERA\FLOOR2\ROOM3\F2-R3.MAJ

If not supplied the Job will be saved to the default Project Area.

##### PROJECTAREA\_END

##### ARCHIVE (option = {YES/NO})

Should the database on the Master system be saved with this Job ?

Default is NO.

##### FIELD1 (type = TEXT)

Additional job information can be inserted using this field.

##### FIELD2 (type = TEXT)

Additional job information can be inserted using this field.

##### PROCESS (type = TEXT)

Process Name of process to be started automatically once job loaded

Only used if job is auto-loaded as batching option

#### JOBHEADER\_END\*

<\*\*\*ITEM Details to be inserted at this point (Appendix B) See example (Appendix C) for example structure>

### JOB\_END\*

# Job Import Tool

## Appendix B – Item details defined

**Key:** For readability we have added the color symbol that should be taken out when creating the conversion file.  
 \*= When allocated denotes the field as a requirement.

### JOB\_START

<\*\*\*Job Details entered here>

#### ITEM\_START\*

##### ITEMHEADER\_START\*

##### Group Option Start

Only **one** of the following group options should be present in any Item. The **ITEMFILE** method or **PATTERN\_CID** are recommended for both speed and flexibility. The behavior of this option is not defined if more than one of these group options is present in a single item.

#### 1 PATTERN\_NUMBER (type = INTEGER)

A unique number determined by the software to identify a particular base fitting. This method cannot be used to select fittings which have been created by copying and editing base fittings, though it can be used if the base fitting has only been edited. The fitting template file must be in the default fittings folder. The behavior of this option is not defined if the default folder contains more than one fitting with the same pattern number.

#### 2 PATTERN\_CID (type = INTEGER)

A user defined number which identifies a particular fitting. The fitting template file must be in the default fittings folder. The behavior of this option is not defined if the default folder contains more than one fitting with the same pattern CID.

#### 3 PATTERN\_ALIAS (type = TEXT)

A user defined text string which identifies a particular fitting. The fitting template file must be in the default fittings folder. The behavior of this option is not defined if the default folder contains more than one fitting with the same pattern alias.

#### 4 ITEMFILE (type = FILE)

The full path and filename to the required fitting template (.ITM) file. (Path + Filename)

##### PATTERN\_REF (type = TEXT)

A user defined text string which gives the full path & filename to a fitting template through the use of a lookup table.

Group Option End

The screenshot shows the 'Item Properties' dialog box with the 'General' tab selected. The 'Custom' field is set to 'RECT-StraightAuto.png'. The 'Source' section shows the 'Path' as 'ftware/Shared/Items/HVAC/Rectangular/' and the 'Filename' as 'Straight'. The 'CID' is '866', with a note '(Based on Pattern 866)'. The 'Description' is 'Straight', the 'Alias' is '3', the 'User' is 'Unknown', and the 'Type' is 'Rectangular'. The 'Extra Over' is set to 'Off'. There are checkboxes for 'Certified', 'Catalogue', 'Fix Relative', and 'Hidden', all of which are currently unchecked.

## **PRODUCT\_NAME** (type = TEXT)

Required for Product Lists

The Product Description for a Product List. Required to specify which entry in a product list is used.

## **ITEM\_NUMBER\*** (type = TEXT)

The name that will be given to this item in the Job.

## **SPEC** (type = TEXT)

The name of the Specification that will be used for this item. This must match a Specification name on the Master system that is valid for this particular fitting. (Specs can be found in the Pattern Database > Specifications)

If not supplied the Specification for the fitting will be set to None.

## **MATERIAL\*** (type = TEXT)

The name of the Material that will be used for this item. This must match a Material name on the Master system. (Main Database > Materials)

Group Option Start

Only one of the following Group Options is required, though both may be present. If both are present the GAUGE entry will be used if the Master system is set to Metric configuration, and the WIRE\_GAUGE entry if set to Imperial

## **GAUGE** (type = DECIMAL)

Required Group Option

The thickness of the Material that will be used for this item and best used if not determining a Specification.

## **WIRE\_GAUGE** (type = INTEGER)

Required Group Option

The wire gauge equivalent for the thickness of the Material.

Group Option End

## **GAUGE\_RANGE** (type = DECIMAL)

The additional thickness of material that the parts can be cut out using to save Wasted material on nests.

Default value is 0

## **DOUBLEWALL** (option = {INSIDE/OUTSIDE/OFF})

Include to specify whether a fitting should be made with two skins.

If not supplied then the data is picked up from the base fitting.

If double wall is specified then Insulation MUST also be specified, as this defines The thickness between the skins.

If Double wall is set to INSIDE or OUTSIDE then the following groups are required

## **DOUBLEWALL\_ENTRY** (option = {INSIDE/OUTSIDE})

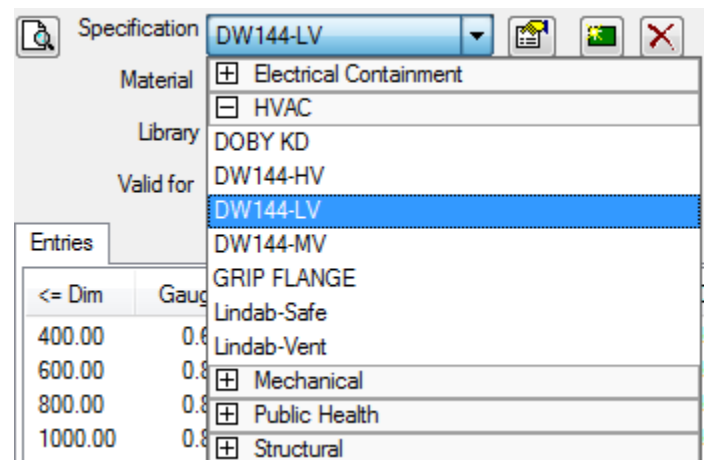
Required Group Option

Whether the dims specified are the INSIDE or OUTSIDE skin dimensions

## **DOUBLEWALL\_MATERIAL** (type = TEXT)

Required Group Option

The Material name of the second Skin



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One of the following MUST also be specified

**DOUBLEWALL\_GAUGE** (type = DECIMAL)

The true thickness of the second Skin

**DOUBLEWALL\_WIRE\_GAUGE** (type = INTEGER)

The wire gauge of the second Skin

**QUANTITY\*** (type = INTEGER)

The quantity of items to be produced.

**INSULATION\_MATERIAL** (type = TEXT)

Optional (Required for DOUBLEWALL)

The name of the Material that will be used for the insulation for this item.

This must match a Material name on the Master system.

If not supplied the Insulation will be set to None.

**INSULATION\_GAUGE** (type = DECIMAL)

Optional (Required for DOUBLEWALL)

**INSULATION\_SIDE** (option = {INSIDE/OUTSIDE})

Optional – NOTE this should not be used for DOUBLEWALL entry

**FACINGS\_START** (type = TEXT)

**FACINGS\_END**

**NOTES** (type = TEXT)

**ORDER\_NUMBER** (type = TEXT)

**PALLET** (type = TEXT)

**HOLES** (type = INTEGER)

Optional - Entry of the number of holes required as a value

within this header. Dimensions and Options used for the holes such as Width, Depth and Offset values for the hole should be listed under the **DIMS\_START** field or as options respective to the pattern in use.

**EXTRAFTIME** (type = DECIMAL)

**EXTRAETIME** (type = DECIMAL)

**ITEMHEADER\_END**

**DIMS\_START** (type = DECIMAL)

The dimensions that determine the size of the fitting.

If the number of dimensions supplied is less than the number required by the fitting template then the remaining dimensions will be the same as the fitting template. If the number of dimensions supplied is more than the number required by the fitting template then the extra dimensions will be ignored.

The dimensions must be supplied in the correct order taking into account if the master system has locked dimensions. These will then be ignored so the next unlocked dimension is used.

**DIMGROUP\_START**

Not implemented

**DIMGROUP\_END**

**DIMS\_END**

**OPTIONS\_START** (type = DECIMAL)

The options that control various aspects of the fitting. If the number of options supplied is less than the number required by the fitting template then the

Item	Dimensions	Options	Connectors
	Dimension	Value	
	Input Units	Default (Metr...	
A	Top Width	600.00	
B	Depth	400.00	
C	Angle	90.00	
D	Top Inner Extension	50.00	
E	Bottom Extension	50.00	
F	Inner Radius	Half Width	

1

Example of above dims:

**DIMS\_START**

600

400

90

1000001

Example of options/combo boxes:

"0"=No, "1"=Yes

"2", "3", "4".. etc should be used if the option cycles for more than 2 available values.

Drop down list values use "1000000" for the first available and then "1000001", "1000002", "1000003".. etc

Example of option use:

See Appendix C – Example.



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remaining options will be the same as the fitting template. If the number of options supplied is more than the number required by the fitting template then the extra options will be ignored.  
The options must be supplied in the correct order taking into account locked Options as per the dimensions example.

### OPTIONS\_END

#### CONNS\_START (type =TEXT)

- 1 The names of the Connectors that will be used by the fitting to be listed as shown in the example for "DM-25" Slide on Flange. Both C1 and C2 can be specified. If the pattern supports additional connectors you can list C3, C4 etc  
The connectors must be supplied in the correct order.  
These must match with Connector names on the Master system (Pattern Database > Connectors > Select the Pattern Group from the list)

#### CONNS\_END

#### CONN\_POSITION\_START

##### INSERTION\_POINT (type = DECIMAL)

Co-ordinates to be specified in the drawing separated by commas

##### DIRECTION\_VEC (type = DECIMAL)

Co-ordinates to be specified in the drawing separated by commas

##### WIDTH\_VEC (type = DECIMAL)

Co-ordinates to be specified in the drawing separated by commas

#### CONN\_POSITION\_END

#### SEAMS\_START (type =TEXT)

The names of the Seams that will be used by the fittings  
These must match with Seam names on the Master system.  
The seams must be supplied in the correct order.

#### SEAMS\_END

If Double wall is specified then the following options are also required:

#### DOUBLEWALL\_CONNS\_START (type =TEXT)

The names of the Connectors that will be used by the fitting for the second Skin  
These must match with Connector names on the Master system  
The connectors must be supplied in the correct order.

#### DOUBLEWALL\_CONNS\_END

#### DOUBLEWALL\_SEAMS\_START (type =TEXT)

The names of the Seams that will be used by the fitting for the second Skin  
These must match with Seam names on the Master system  
The seams must be supplied in the correct order.

#### DOUBLEWALL\_SEAMS\_END

#### SPLITTERS\_START (type =TEXT)

The names of the Splitters that will be used by the fitting.

SLIDE ON FLANGES	
DM-25	0.00
DM-35 J3	
DM-35 J4	
MEZ-20E	
MEZ-30E	
MEZ-40	
DM-20	
DM-30 J3	
DM-30 J4	
DM-45	
SLIP JOINTS	
SLIP-LE	0.00
SLIP-SE	50.00

Example of Connector input:

CONNS\_START  
DM-25  
DM-25  
CONNS\_END

Example of Connector position:

CONN\_POSITION\_START  
INSERTION\_POINT (type = DECIMAL)  
1532.18279, 1142.81937, 0.00  
DIRECTION\_VEC (type = DECIMAL)  
-1.00, 0.00, 0.00  
WIDTH\_VEC (type = DECIMAL)  
0.00, 0.00, -1.00  
CONN\_POSITION\_END

Also see Appendix D for CAD related export.



These must match with Splitter names on the Master system.

The splitters must be supplied in the correct order if there are multiple sets.

**SPLITTERS\_END**

**AIRTURNS\_START** (type =TEXT)

The names of the Airturns that will be used by the fitting.

These must match with Airturn names on the Master system.

The airturns must be supplied in the correct order if there are multiple sets.

**AIRTURNS\_END**

**CUSTOM\_DATA\_START** (type = TEXT)

Identify custom data that is assigned to the item.

**CUSTOM\_DATA\_END**

**ITEM\_END**

**JOB\_END**

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## Appendix C – Example ASCII File

**Key:** For readability we have added notes next to the ASCII text file example to highlight important information.  
 // = When indicated is for information purposes only to assist you in the creation of the ASCII file.

```
JOB_START
JOBHEADER_START
JOB_NAME
TestAscii
JOBHEADER_END
ITEM_START
ITEMHEADER_START
PATTERN_NUMBER
866 //Pattern 866 - Rectangular Straight
ITEM_NUMBER
1
SPEC
DW144-LV //Specification assigned now would take care
MATERIAL // of Gauge, Connectors, Seams used etc.
Galvanised
QUANTITY
1
ITEMHEADER_END
DIMS_START
600 //Width
400 //Depth
1000000 //Length - Entered 1 million to establish as Auto
DIMS_END
ITEM_END
ITEM_START
ITEMHEADER_START
PATTERN_NUMBER
4 //Pattern 4 - Rectangular Radius Bend
ITEM_NUMBER //In this case the dimensions for the
2
SPEC
DW144-LV // extensions have been locked.
MATERIAL
Galvanised
QUANTITY
1
ITEMHEADER_END
DIMS_START
600 //Width
400 //Depth
90 //Angle
1000001 //Radius - Entered as 1 million to set first drop
DIMS_END //down option from the list. 1000001 for second etc
OPTIONS_START
0 //Throat Type - Entered as 0 or 1 for Radius(0)or
OPTIONS_END // Mitred(1)as this is a cycle option.
ITEM_END
ITEM_START
```

```
ITEMHEADER_START
PATTERN_NUMBER
8 //Pattern 8 - Square to Round
ITEM_NUMBER //In this case the dimensions for the
3 // extensions and collars have been locked on the
SPEC // master so they do not need to be entered as dims
DW144-LV
MATERIAL
Galvanised
QUANTITY
1
ITEMHEADER_END
DIMS_START
600 //Width
400 //Depth
355 //Diameter
500 //Length
1000002 //Offset Width - Set to Central which is 3rd in the drop down
1000002 //Offset Depth - Set to Central which is 3rd in the drop down
DIMS_END
ITEM_END
JOB_END
```

# Job Import Tool

## Appendix D – Example ASCII File Exported from CADmep+

### Command exportjob

**Key:** For readability we have added notes next to the ASCII text file example to highlight important information.

//= When indicated is for information purposes only to assist you in the creation of the ASCII file..

```
JOBHEADER_START
JOB_NAME
    TestAscii
JOB_REFERENCE
    54321
JOB_DATE
    24/06/2009
JOBHEADER_END
ITEM_START
ITEMHEADER_START
ITEMFILE
    //Filepath of the server can be used as shown here
    //File-server/MAP-Software/Shared/Items/HVAC/Rectangular/Square to Round.ITM
ITEM_NUMBER
    4
SPEC
    DW144-LV
MATERIAL
    Galvanised
GAUGE
    0.8
WIRE_GAUGE
    22
QUANTITY
    1
DOUBLEWALL
    OFF
INSULATION_MATERIAL
    ACOUSTIC //Insulation Name specified
INSULATION_GAUGE
    50 //Insulation thickness set to 50mm
INSULATION_SIDE
    OUTSIDE //Insulation selected for Outside use which would increase the
ITEMHEADER_END //outer periphery of the duct by 100mm for the 50mm insulation
CUSTOM_DATA_START
    Report Priority=1.91 //Custom data fields can be allocated to the item.
CUSTOM_DATA_END
DIMS_START
    400.00
    600.00
    355.00
    500.00
    1000002.00
    1000002.00
    50.00
    1000000.00
    15.27559
DIMS_END
OPTIONS_START //All options are listed as shown here 0 being the first option
```

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```

0.00          // and 1 being the second etc.
1.00
1.00
2.00
0.00
0.00
0.00
0.00
1.00
2.00
180.00       //value set here for maximum angle option.
OPTIONS_END
CONNS_START
  DM-25       //Connector names are listed within this START and END for C1
  LV-Male     //and C2 of the Square to Round
CONNS_END
SEAMS_START
  PITTS-S
  PITTS-S
SEAMS_END
CONN_POSITION_START //CAD references allocated for drawing to be viewed after
INSERTION_POINT    //import of the file
  1984.68279, 1142.81937, 452.50
DIRECTION_VEC
  0.00, 0.00, -1.00
WIDTH_VEC
  1.00, 0.00, 0.00
CONN_POSITION_END
ITEM_END
ITEM_START
ITEMHEADER_START
ITEMFILE
  File-server/MAP-Software/Shared/Items/HVAC/Rectangular/Radius Bend.ITM
ITEM_NUMBER
  3
SPEC
  DW144-LV
MATERIAL
  Galvanised
GAUGE
  0.8
WIRE_GAUGE
  22
QUANTITY
  1
DOUBLEWALL
  OFF
INSULATION_MATERIAL
  ACOUSTIC
INSULATION_GAUGE
  50
INSULATION_SIDE
  OUTSIDE
ITEMHEADER_END

```

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```
CUSTOM_DATA_START
  Report Priority=1.2
CUSTOM_DATA_END
DIMS_START
  400.00
  600.00
  90.00
  50.00
  50.00
  1000001.00
DIMS_END
OPTIONS_START
  0.00
  0.00
  0.00
  1000000.00
  1000000.00
  30.00
  30.00
OPTIONS_END
CONNS_START
  DM-25
  DM-25
CONNS_END
SEAMS_START
  PITTS-S
SEAMS_END
SPLITTERS_START
  STANDARD - Pins
SPLITTERS_END
CONN_POSITION_START
INSERTION_POINT
  1532.18279, 1142.81937, 0.00
DIRECTION_VEC
  -1.00, 0.00, 0.00
WIDTH_VEC
  0.00, 0.00, -1.00
CONN_POSITION_END
ITEM_END
ITEM_START
ITEMHEADER_START
ITEMFILE
  File-server/MAP-Software/Shared/Items/HVAC/Rectangular/Straight.ITM
ITEM_NUMBER
  2
SPEC
  DW144-LV
MATERIAL
  Galvanised
GAUGE
  0.8
WIRE_GAUGE
  22
QUANTITY
```

# Job Import Tool

```
1
DOUBLEWALL
  OFF
INSULATION_MATERIAL
  ACOUSTIC
INSULATION_GAUGE
  50
INSULATION_SIDE
  OUTSIDE
ITEMHEADER_END
CUSTOM_DATA_START
  Report Priority=1.1
CUSTOM_DATA_END
DIMS_START
  600.00
  400.00
  1000000.00
DIMS_END
OPTIONS_START
  0.00
  1000000.00
  30.00
  0.00
  0.00
  1000000.00
  30.00
OPTIONS_END
CONNS_START
  DM-25
  DM-25
CONNS_END
SEAMS_START
  PITTS-S
  PITTS-S
SEAMS_END
CONN_POSITION_START
INSERTION_POINT
  27.18279, 1142.81937, 0.00
DIRECTION_VEC
  -1.00, 0.00, 0.00
WIDTH_VEC
  0.00, -1.00, 0.00
CONN_POSITION_END
ITEM_END
```