Connex

Getting Started Guide

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Contents

Workflows

This <u>Connex Getting Started Guide</u> walks you through the most common tasks used in Connex.

There are two primary workflows described in this guide: *Downloading and Processing Data*, which starts on Page 5 and *Creating and Uploading a Connex Job*, which starts on Page 12.

Refer to the Connex Reference Manual for detailed information on every screen and dialog box in Connex.

Architectural Units

Fractional inches (architectural units) can be entered into any field that accepts a distance. Simply key in the feet, inches, and fractional inch while separating each value with a space. Enter the fraction using a forward slash (/). For example, to enter 3 feet, 7 and 3/16 inches, you would key in 3 7 3/16. Once the cursor leaves that field, the distance will automatically be converted to the appropriate decimal distance. If the distance entered is less than one foot, a leading zero representing the feet value is still required. Similarly, if entering a distance less than one inch, two leading zeros are required representing the feet and inch values. For example, 5/8 inch would be entered as 0 0 5/8.

Note: Connex will only accept fractions that are evenly divisible by 1/16 inch. If a fraction is entered that is not evenly divisible by 1/16, it will be converted to the nearest 1/16 inch.

The following details should be considered when using the above method to enter fractional inches:
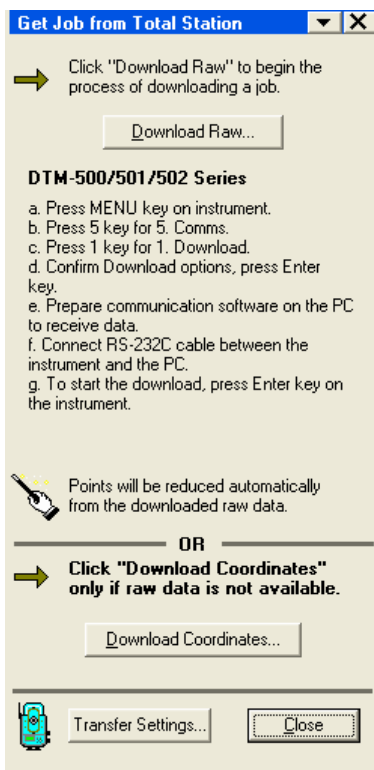
1. When the job is configured for Feet or US Survey Feet, it is assumed that the distance entered is in the same units as the job is configured for.

2. If the job is configured for meters, it is assumed that the distances entered are in International Feet and will be converted to meters when the cursor leaves the current field. (You cannot use this method to enter a metric distance in fractional format.)

3. If a fractional inch is entered that cannot be evenly divided by 1/16 inch, it will be automatically converted to the nearest 16th inch.

Downloading and Processing Data

This section explains the process of gathering data from a total station, working with that data, and then exporting it to one of a variety of other file formats to be used with other applications.

Download from a Total Station

Before attempting to download data from the total station, make sure it is connected to an available COM port on the PC with an appropriate communication cable.
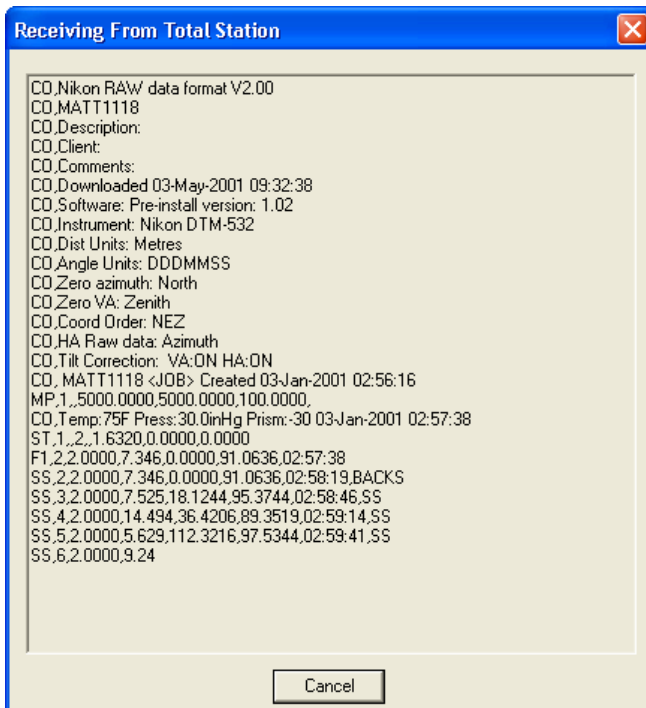
Get Job from Total Station

Click "Download Raw" to begin the process of downloading a job.

Download Raw...

DTM-500/501/502 Series

a. Press MENU key on instrument.
b. Press 5 key for 5. Comms.
c. Press 1 key for 1. Download.
d. Confirm Download options, press Enter key.
e. Prepare communication software on the PC to receive data.
f. Connect RS-232C cable between the instrument and the PC.
g. To start the download, press Enter key on the instrument.

Points will be reduced automatically from the downloaded raw data.

— OR —

Click "Download Coordinates" only if raw data is not available.

Download Coordinates...

Transfer Settings...   Close

1. Start Connex: **Start** > **All Programs** > **Connex** > ✖ **Connex**

2. Click **Get Job from Total Station**, either from the Transfer pull-down menu or the shortcuts.

3. If this is the first time the transfer routine has been initiated in Connex, the Transfer Preferences dialog will be presented.
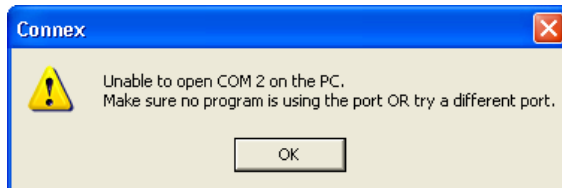
Note for users of DTM-300, DTM-310, DTM-400 Series instruments: It is assumed the data downloaded is in the same angle and distance units as specified in the **Transfer Preferences** screen. Care should be taken to configure these fields correctly if downloading from these instruments, or else the downloaded data will be set to the wrong units, requiring re-download. Due to this behavior, it is also important to never change the distance and angle units on these total stations during the course of the survey.

4. Confirm that the settings are correct and click [**OK**] to close this dialog and return to the Get Job from Total Station dialog.

5. Follow the instructions provided in the dialog to start sending data from the total station. (These instructions are customized for the total station model selected in the Transfer Preferences dialog.) Click [*Download Raw*] on the PC prior to sending the data from the total station. The data being downloaded will appear in the Receiving From Total Station dialog box.

Receiving From Total Station

```
CO,Nikon RAW data format V2.00
CO,MATT1118
CO,Description:
CO,Client:
CO,Comments:
CO,Downloaded 03-May-2001 09:32:38
CO,Software: Pre-install version: 1.02
CO,Instrument: Nikon DTM-532
CO,Dist Units: Metres
CO,Angle Units: DDDMMSS
CO,Zero azimuth: North
CO,Zero VA: Zenith
CO,Coord Order: NEZ
CO,HA Raw data: Azimuth
CO,Tilt Correction: VA:ON HA:ON
CO, MATT1118 <JOB> Created 03-Jan-2001 02:56:16
MP,1,,5000.0000,5000.0000,100.0000,
CO,Temp:75F Press:30.0inHg Prism:-30 03-Jan-2001 02:57:38
ST,1,,2,,1.6320,0.0000,0.0000
F1,2,2.0000,7.346,0.0000,91.0636,02:57:38
SS,2,2.0000,7.346,0.0000,91.0636,02:58:19,BACKS
SS,3,2.0000,7.525,18.1244,95.3744,02:58:46,SS
SS,4,2.0000,14.494,36.4206,89.3519,02:59:14,SS
SS,5,2.0000,5.629,112.3216,97.5344,02:59:41,SS
SS,6,2.0000,9.24
```

Cancel

Note: If you get a warning that Connex is unable to open the COM port and you are running ActiveSync, open the *ActiveSync Connection Settings* and un-check the Allow serial cable or infrared connect to this COM port checkbox.

Connex

⚠ Unable to open COM 2 on the PC.
Make sure no program is using the port OR try a different port.

OK

Note: If you see garbage characters filling the Receiving From Total Station dialog box during the file transfer, make sure the baud rate set in the Transfer Preferences matches the baud rate set in the total station.

Receiving From Total Station
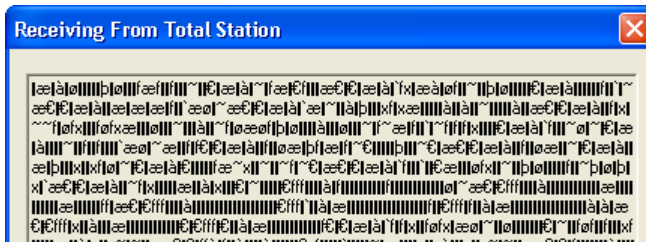
6. When the transfer is complete, you will be prompted for a file name to save job. You can accept the default name or enter a new name. Click [*Save*] to save the job. The job will automatically be opened as the current job in Connex.

7. Verify that the job is what is expected by using various tools: Raw Data Drawing checking locations and settings; COGO and Reports.

8. Optionally use the <u>Export ASCII</u> routine (Page 8) to export a selected set of points to an ASCII file for processing by other applications.

Editing Raw Data – (Optional)

Some of the lines in the current job can be edited. Using the editor guarantees each raw data record is stored in the correct format, but be aware that editing raw data can have undesired results. Before editing raw data, it is recommended that you create a backup of the original job first with the *File* > *Save Job As...* routine.

Edit Raw Data Records	▼ X
	Line No. 32

SS,9,0.0000,,0.0000,75.2224,13:31:50,TREE

Record Type

| ¦ 'SS' SideShot: | ▼ |

Record Fields   ☐ Mark as Deleted

Pt Name:	9	▼
HR:	0.0000	▼
Slope Dist:		▼
H. Angle:	0.0000	▼
V. Angle:	75.2224	▼
Time:	13:31:50	⬍
Description:	TREE	

Jump to...

| Find Records... | Reduce Raw Data... |

| Apply | Close |

1. Make sure the job you want to edit is the current job. If not, open it with the *File* > *Open* routine.

2. Select *Job* > *Edit Raw Data Records*

3. Double click on the line of raw data that you want to edit in the Raw Data View (below the Map View).

4. You can edit any of the fields provided, which will vary depending on the type of data selected in the previous step.

5. Click [*Apply*] to save any changes made.

Note: Editing the raw data has no effect on any point coordinates until you use the [*Reduce Raw Data...*] routine to regenerate the new coordinates from the edited raw data.

Exporting Data to a Third-Party Format

You can convert the data in the current job to any of three different formats: *ASCII text*, *AutoCAD DXF* and *LandXML*.

Prior to exporting to any other format, make sure the job you want to export (convert) is the current job.

Exporting to ASCII Coordinates

1. Select *File* > *Export* > **ASCII (.TXT, etc.)…**

2. Click 📧 to activate it and then select the points you want to export from the Map View. You can also use the corresponding ▾ button to select all the points or select points using other methods.

3. Choose the character you want to use to separate each column of data by selecting the appropriate radio button under the **Delimiter** field.

4. Choose the data you want to include in the ASCII file by checking the corresponding boxes under the **Column Order** field. You can change the order of the columns by dragging the items to the desired position in this list.

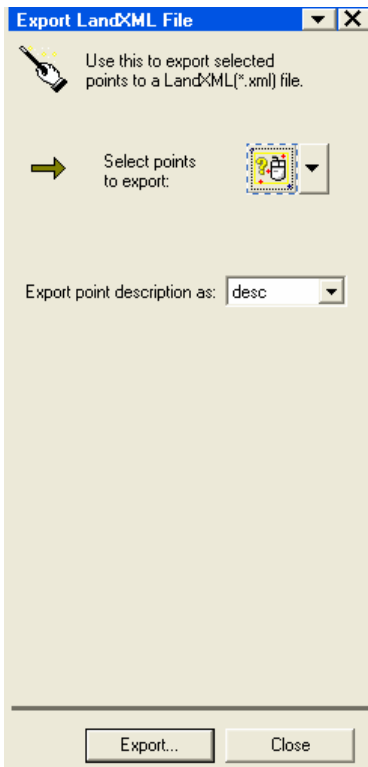5. Click [*Export*] to open the **Save As** dialog box where you specify a file name and save the file.
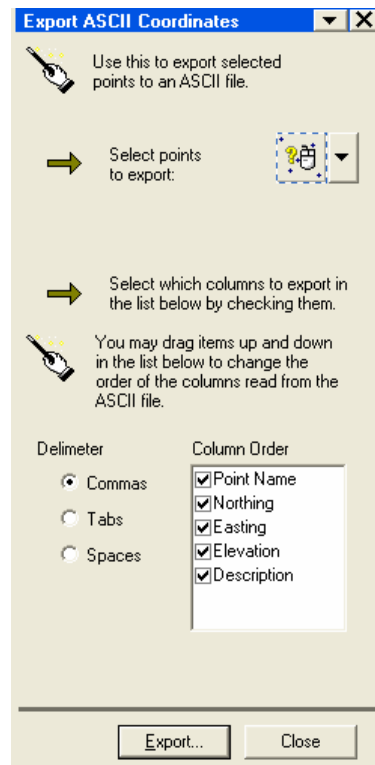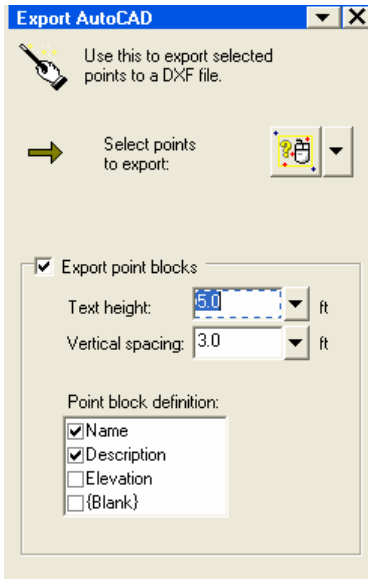
Exporting to AutoCAD

1. Select *File* > *Export* > **AutoCAD (.DXF)…**

2. Click 🔧 to activate it and then select the points you want to export from the Map View. You can also use the corresponding ⏷ button to select all the points or select points using other methods.

3. When *Export point blocks* is checked, AutoCAD point blocks will be exported in addition to non-block points.

4. Select the items you want to export under *Point block definition* field.

5. Click [*Export*] to open the *Save As* dialog box where you specify a file name and save the file.

Exporting to LandXML

1. Select *File* > *Export* > **LandXML (.XML)…**

2. Click 🔧 to activate it and then select the points you want to export from the Map View. You can also use the corresponding ⏷ button to select all the points or select points using other methods.

3. Choose which format to use for point description in the *Export point descriptions as* field.

4. Click [*Export*] to open the *Save As* dialog box where you specify a file name and save the file.

Generating Reports – (Optional)

You can generate *raw data*, *coordinate* and *cut sheet* reports from the <u>Job</u> pull-down menu. Once a report is generated, it is opened in TDSEdit where it can be edited, printed, or saved as an RTF or text document.

Coordinate Report

A coordinate report contains information regarding points selected from the current job.

1. Select ***Job*** > ***Coordinate Report***

2. Click 🔧 to activate it and then select the points you want to include in the report from the Map View. You can also use the corresponding ▾ button to select all the points or select points using other methods.

3. Choose the data you want to include in the report by checking the corresponding boxes under the ***Select the fields…*** field. You can change the order of the columns by dragging the items to the desired position in this list.

4. Click [***Edit Report***] to create the report and open it in TDSEdit.

5. Click [***View Report***] to open it in a read-only report below the Map View.
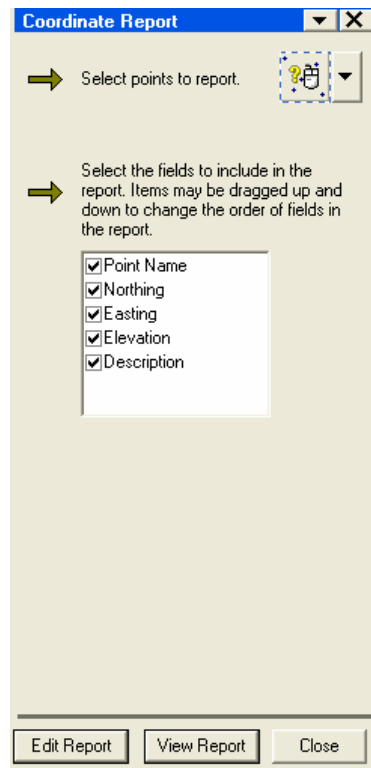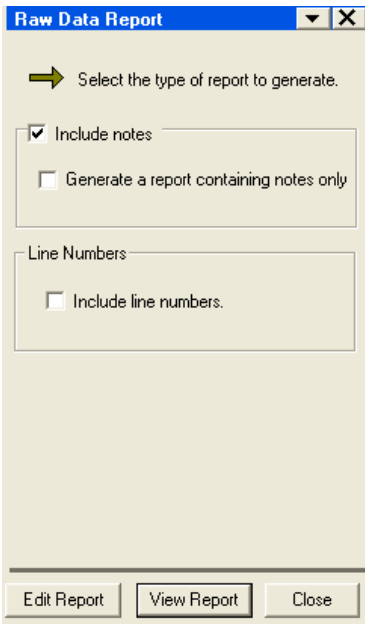
Raw Data Report

A raw data report lists all the raw data in the current job.

1. Select *Job* > *Raw Data Report*

2. When *Include notes* is checked, the note records will be included in the report, otherwise they will be excluded.

3. When *Generate a report containing notes only* is checked, only the note records will be included in the report.

4. When *Include line numbers* is checked, each line will be numbered in the report.

5. Click [*Edit Report*] to create the report and open it in TDSEdit.

6. Click [*View Report*] to open it in a read-only report below the Map View.
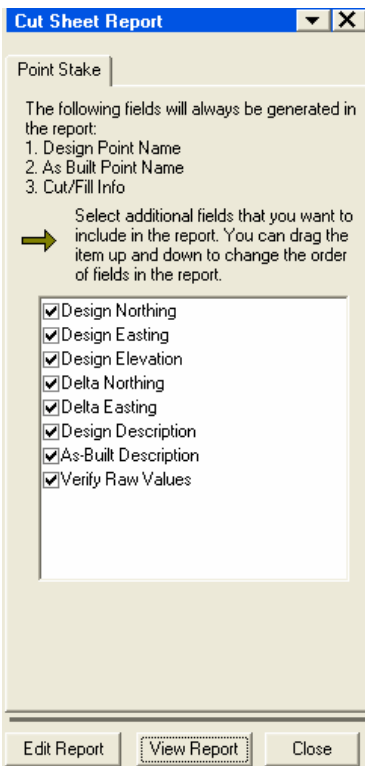
Cut Sheet Reports

Job > *Cut Sheet Report*

Cut sheet reports are generated from point stake records in the raw data file. The report will always have fields for the *Design Point Name*, *As Built Point Name* and *Cut/Fill Info*. Other information is optional.

1. Select the check boxes for the other optional items to be included in the report. The order of the items in the list can be rearranged by dragging them. The items will appear in the report in the order set here.

2. Click [*Edit Report*] to create the report and open it in TDSEdit.

3. Click [*View Report*] to open it in a read-only report below the Map View.

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Creating and Uploading a Connex Job

This section describes how to add data to an existing job and then upload it to a total station.

Importing Data into Connex – (Optional)

Connex can import data from another file into the current job. There are four types of files you can import data from: *ASCII Coordinate (.TXT)*, *AutoCAD (.DXF)*, *LandXML (.XML)*, or *Connex Coordinates, (.CXJ)*.

The procedure for importing any supported file begins with locating the file and then specifying the import options. Only the procedure for importing an ASCII file is explained below. Importing other file types is nearly identical.
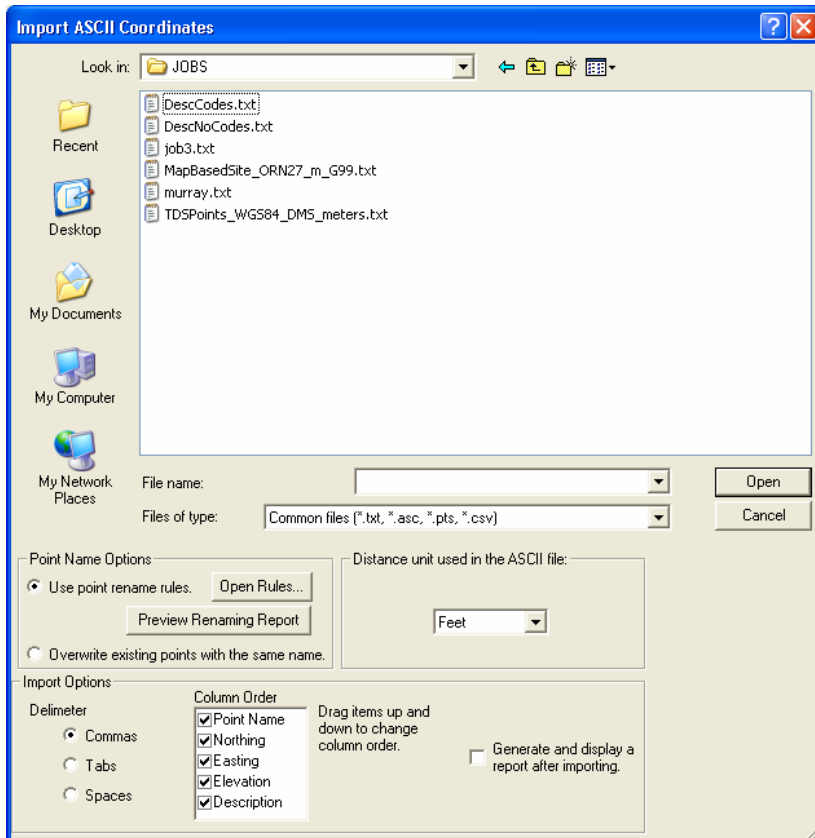
1. Select *File* > *Import* > **ASCII (.TXT, etc.)…** The *Import ASCII Coordinates* dialog box will open where all the import parameters are configured.

2. Click the file you want to import from the list. If the file is not displayed, navigate to the correct folder. If it is still not listed, confirm that the extension of the file you want to import matches an extension listed in the *Files of type* field.

3. When *Use point rename rules* is selected, imported points will be named according to the point rename rules that are configured in the *Rename Rules* dialog box. If you need to modify the rules, click [*Open Rules*].

4. You can optionally click [*Preview Renaming Report*] to create a preview report that shows the points that will be imported and how they will be named.

5. When *Overwrite all existing points with the same name* is selected, imported point data will overwrite the data for points in the current job with the same name.

6. Select the distance units used for the points to be imported in the *Distance unit used in the ASCII file* field.

7. Choose the character used in the source file to separate each column of data by selecting the appropriate radio button under the *Delimiter* field.

8. The *Column Order* field lists the order of the columns in the source file. Columns that do not exist in the source file should be un-checked. Each item in this list can be dragged to a new position so the order matches the order of the columns in the source file.

9. When *Generate and display a report after importing* is checked, a TDSEdit report will be generated after the import process is complete.

10. Click [*Open*] to import the coordinates.
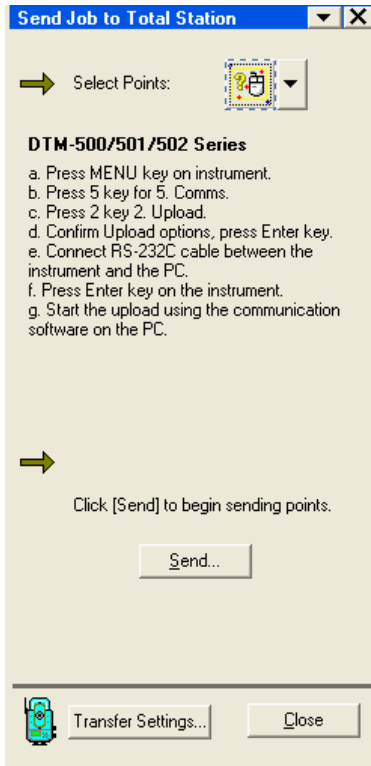
Adding Points Manually – (Optional)

Points can be manually added to the current job when the coordinates are already known. This routine is useful when you are not able to import those points from another file.

1. Select *Edit* > *Add Points / Edit Points...* to open the *Add / Edit Points* dialog where a new point can be added. (This dialog is also used to edit an existing point.)

2. Enter the point number for the point you want to add in the *Pt Name* field or tap [*New*] to automatically enter the next available point number.

3. Specify the *Northing*, *Easting*, and *Elevation* for the new point in the corresponding fields. It is possible to leave the *Elevation* field blank for 2D points.

4. You can optionally enter a description for the point in the *Description* field.

5. Click [*Add*] to add the new point to the current job.

Upload a Job to the Total Station

1. Open the job that you want to send to the total station. (It must be the current job.)

2. If you need to add any control points or other points, add them manually as described on Page 14, or import them automatically from another file as explained on Page 12.

```
Send Job to Total Station        ▼ ✕

⟹  Select Points:    [ 🎨 ] ▼

DTM-500/501/502 Series

a. Press MENU key on instrument.
b. Press 5 key for 5. Comms.
c. Press 2 key 2. Upload.
d. Confirm Upload options, press Enter key.
e. Connect RS-232C cable between the
instrument and the PC.
f. Press Enter key on the instrument.
g. Start the upload using the communication
software on the PC.


⟹
         Click [Send] to begin sending points.

              [ Send... ]


─────────────────────────────────

🔧  [ Transfer Settings... ]    [ Close ]
```

3. Click **Send Job to Total Station**, either from the <u>Transfer</u> menu or the shortcuts.

4. If this is the first time the transfer routine has been initiated in Connex, the <u>Transfer Preferences</u> dialog will be presented. (This dialog will always be presented if the **Always prompt for Transfer Settings** checkbox is checked in the same dialog.)

5. Follow the instructions displayed on the dialog and click [**Send…**]. (These instructions are customized for the total station model selected in the <u>Transfer Preferences</u> dialog.)

6. When the transfer is complete, the total station is loaded with the job and ready to send to the field.