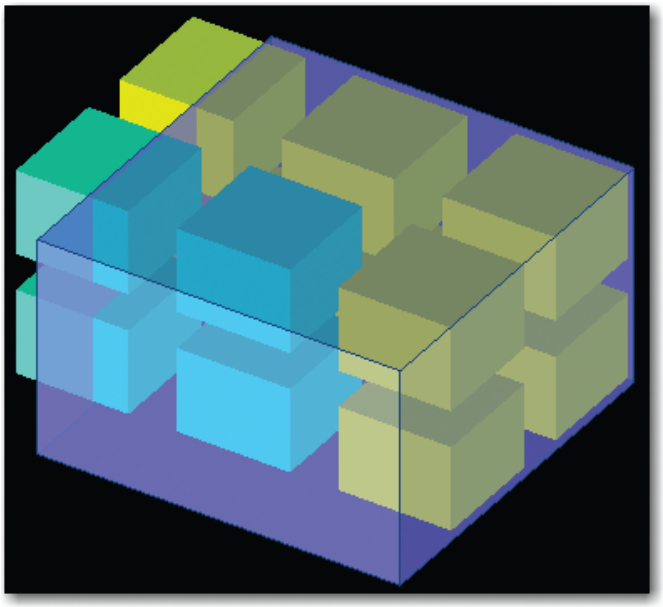
TIPS from Tech Support

How to Reblock Your 3D Block Model Using MSDART



MineSight® Data ASCII Reformat Tool (MSDART) is used to reformat and perform calculations on ASCII data files. One of these reformat operations is reblocking. Based on X, Y, and Z dimensions, reblocking is the technique of grouping several smaller model blocks (source) into a single larger block (destination), or splitting a larger block into smaller blocks. In the reblocking process, various rock codes and grade items can be assigned or calculated for the new (destination) block using majority percentage coding or weighted averages. Weighted averages are on tonnage, volume, or proportion.

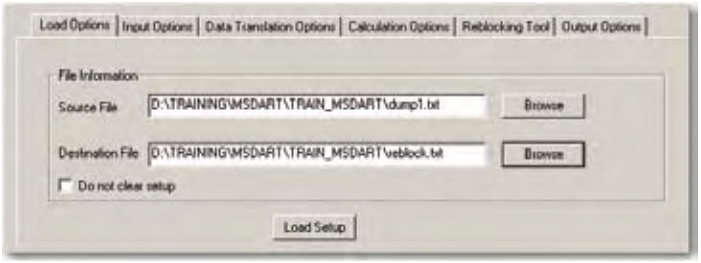
What follows are the steps to format or reblock (smaller blocks to larger blocks) an ASCII block model file to be loaded into a MineSight® project, assuming the ASCII source file came from an unrotated MineSight® block model and that each block's coordinates are located at the centroid.

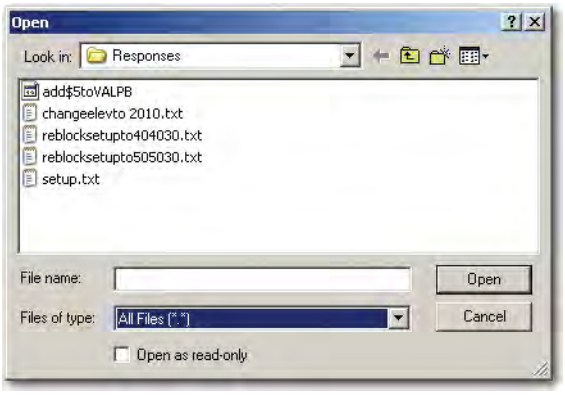
The steps to reblock a block model file are:

1 Select source and destination files.
2 Specify input data format.
3 Enter block centroid size parameters as necessary.
4 Enter new block model limits and item value weighting parameters.
5 Specify output items and format.

Step 1 - Select source and destination files – Load Options tab

On the **Load Options** tab, click the **Browse** button to search for and select the file containing the source data.





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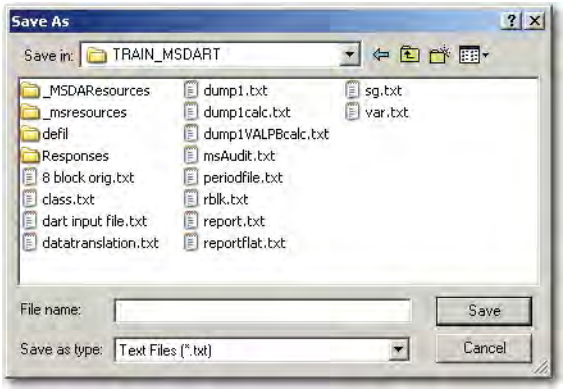
Next, click the lower **Browse** button to specify the location and name of the destination file to be created containing the reblocked data.

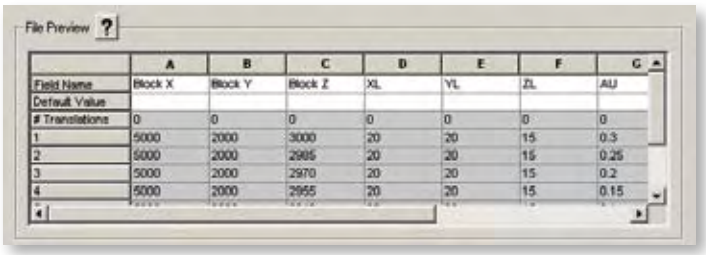


Step 2 - Specify input data format – Input Options tab

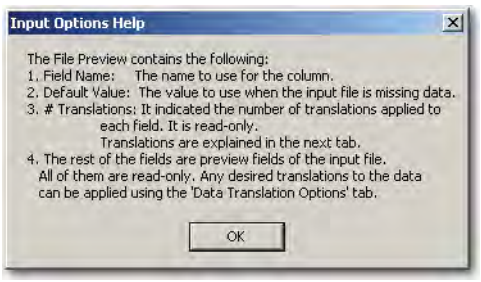
To enable MSDART to read the input file, specify the file's format by selecting one of four options: **Comma**, **Space delimited**, **Other** (used when a character such as a $ separates columns of data), or **Fixed Column** (specifying each data column's width by entering a range of column numbers separated by a comma, e.g. 1-8).

Once an option has been selected, click the Preview Fields button Preview Fields to preview your data in the window below, verifying that it is being read accurately, per column. A final option is to have MSDART determine the data column limits automatically by clicking on the Find Limits button Find Limits .

Under the **File Preview** section in the **Field Name** row, a meaningful name (header) for each data column within the file may be added such as: BLOCK X, BLOCK Y, BLOCK Z for the respective X, Y, Z block coordinates and XL, YL, and ZL representing the block dimensions in the X, Y, and Z directions, respectively. This is done to later facilitate selecting the correct column of data on the **Calculation Options**, **Reblocking**, and **Output Options** tabs.



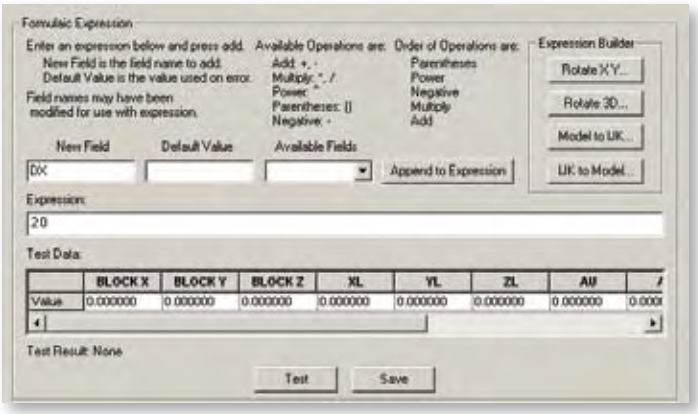
For additional assistance regarding the **File Preview** row values, click the question mark button to open the **Help** dialog which provides descriptions of the data on each row.



Step 3 - Enter block centroid size parameters as necessary – Calculation Options tab

The **Calculation Options** tab may or may not be used when reblocking based upon whether or not your block model is rotated and if you want to perform calculations on your data. If the model is rotated and created with MineSight®, then it should be exported to ASCII using model coordinates. If your input file contains the X, Y, and Z dimensions for each block, then the **Calculation Options** tab may be left blank. This circumstance is most often encountered when the source file is created with mine planning software other than MineSight®.

If the source file was created using MineSight®, it is necessary to specify block length variables and values. To do this, type "DX" in the **New Field** box, enter the X size of the current/source block in the **Expression** box and click the **Save** button. This value for the X length of the mining blocks will now appear in the **Calculated Fields** box shown on next page.



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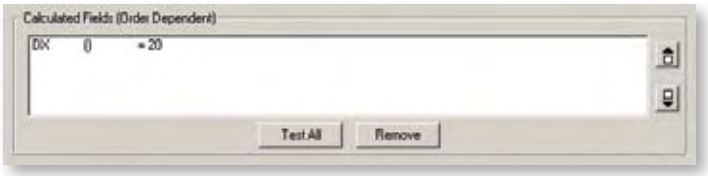
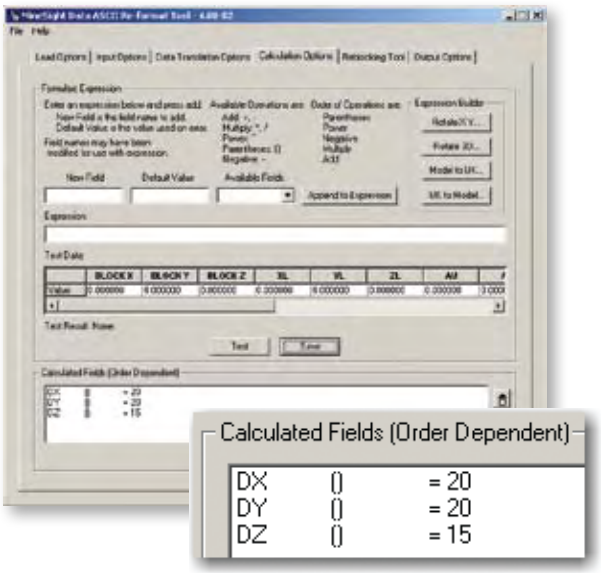
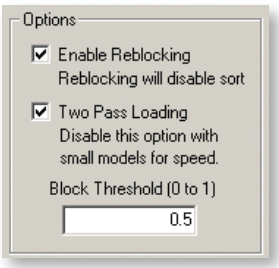


Repeat this process for the Y and Z block lengths by entering the variables DY and DZ with corresponding lengths and saving them. The result of this step is shown below.



To remove an incorrect row from the **Calculated Fields** section, highlight the calculated field and click the **Remove** button.

Step 4 - Enter new block model limits and item value weighting parameters – Reblocking tab

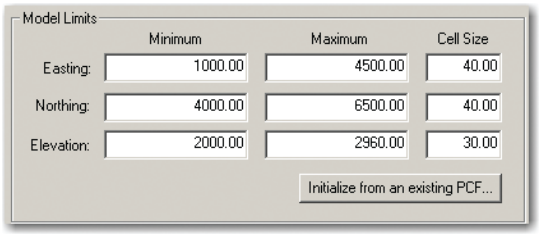


Check the **Enable Reblocking** box under the **Options** section to activate this panel.

Checking the **Two Pass Loading** option will load source data into the computer's memory on an as-needed basis instead of all at once (unchecked). When reblocking a large model (going from a small block size to a larger block size), leave it checked (default setting).

The **Block Threshold** value is the decimal percentage (i.e., a value of 0.50 = 50%) of each source block that must be contained within a given destination block to be used in the reblocking process.

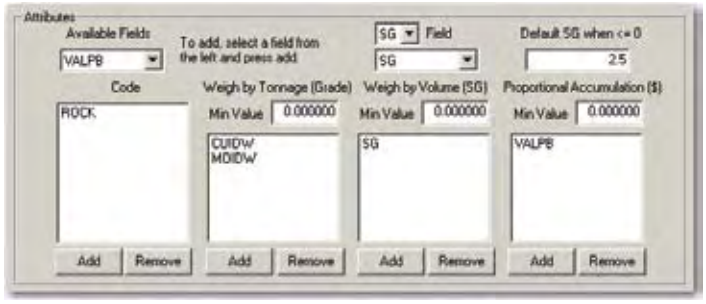
Enter the block model limits for the reblocked model and the larger cell (block) size within the **Model Limits** section. This can be performed manually or by clicking **Initialize from an existing PCF** and selecting a project control file from a MineSight® project.



Under the **Block** section, select the input file column headers which correspond to the X, Y, and Z block centers and block lengths, respectively. If the input file contains the X, Y, and Z block lengths, then it might appear as shown below, with XL representing the block length along the X axis and so forth.

If the source file does not contain the block X, Y, Z length values, using the **Block Size** pulldown lists, select DX, DY, and DZ respectively as shown below.

The **Attributes** section shown below is used to specify how block model item values (codes, grades, etc.) in the source file will be applied to the reblocked blocks. This is done by selecting a block item from the **Available Fields** pulldown menu, then clicking one of the four **Add** buttons under one of the function headings: **Code**, **Weigh by Tonnage**, **Weigh by Volume**, or **Proportional Accumulation**. Any single item should appear only once under the **Attributes** section. The following will describe each of these functions.



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Code – All block items listed here should only contain integer values. The reblocked (larger) block will receive a code for each listed item based upon the code which occupies the largest percentage of the destination block.

Weigh by…

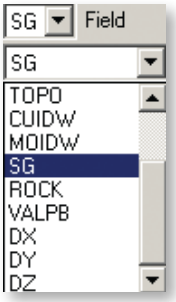
Tonnage – This is typically used to determine the grade of the larger block. This is a weighted average grade and is calculated using the specific gravity (SG) or tonnage factor (TF) of each smaller block and the corresponding volume of each smaller block contained within the larger block.

Volume – Normally used to determine the weighted average specific gravity or tonnage factor for the destination block by utilizing the volume of each source block.

Proportional Accumulation – This is most often used for items containing monetary values such as value per ton or block. The percentage of each source block within the destination block is multiplied by its respective value and summed to yield the destination block value.

Min Value – This is the minimum value for the specified item(s) within the source block to be considered for reblocking calculations. All values for the listed items which are smaller than the minimum entered will not be used.

Other options



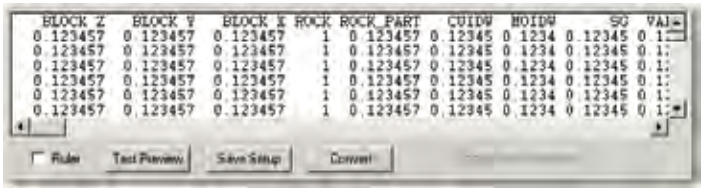
Field – This option and the pulldown list shown below are used to determine whether specific gravity or a tonnage factor is used to calculate tons in the **Weigh by Tonnage** option and which item should be used. If the **None** option is selected, then **Weigh by Tonnage** will function like **Weigh by Volume**.

Default SG when <=0 – This is the default value used when SG or TF values in the source file are equal to or less than zero.

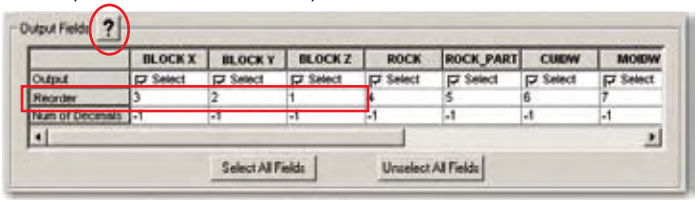
HINT #1: It is not necessary to use **Weigh by Volume** *unless you want to calculate the specific gravity or tonnage factor values for the reblocked model.*

Step 5 - Specify output items and format – Output Options tab

The **Delimiters** section of the **Output Options** tab is used to specify the format of the output file using one of four options: **Comma** or **Space delimited**, **Other** (utilizing a user-defined character such as $ as a data separator), or **Fixed Column** (defining the data limits per column). Since the reblocked file will be loaded into a MineSight® model file, select the **Fixed Column** option and enter a sequence of ranges which reflects the data columns used for each output item. For example, Block Z values use columns 1-10, Block Y values use columns 12-20, and so forth. Click the Test Preview button Test Preview to ensure the data is organized appropriately by column.



The **Output Fields** section is used to specify which data you want to export to ASCII by checking the **Select** boxes in the **Output** row. The **Reorder** row is used to specify the order of the data with the lowest number corresponding to the left-most column and so forth. The **Num of Decimals** row is used to specify the number of decimals for each column. Click on the question mark button shown below for more information regarding these options. Several of the column headers contain an item name with an underscore "_" and "PART" designation such as "ROCK_PART". These columns contain the decimal percentage of the destination block which was occupied by the source block(s) for that particular item (in this case ROCK).



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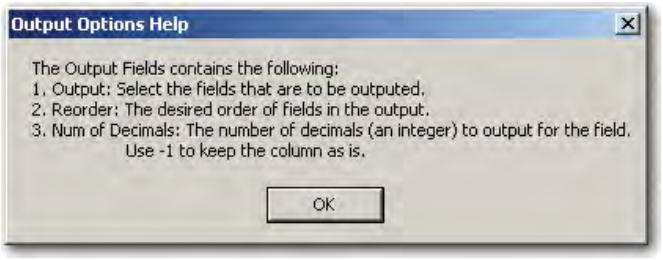
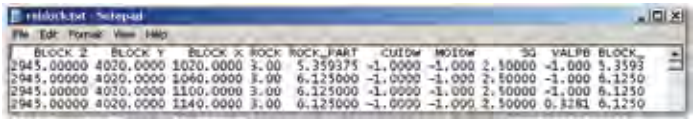
HINT #2: In order to load your reblocked file more quickly into MineSight® 3D using MineSight® Compass™ procedure **p61001.dat**, *change the* **Reorder** *values to load in the following order: bench/Block Z (1), row/Block Y (2), column/Block X (3).*



Save your reblocking set up by clicking the **Save Setup** button Save Setup and entering a file name. Reblock your source file by clicking the **Convert** button Convert .

The reblocked output file containing block Z, Y, and X centroid locations and other values.



Tip of the Month

Cmpres/Modcls/Pitres "Packages"

Recent changes were made to these procedures and their corresponding programs. Since the procedure changes go with matching program changes, we've put the **cmpres**, **modcls**, and **pitres** files together as "package" files on the website, so that you can download all of the associated **cmpres**, **modcls**, or **pitres** files at the same time.

You cannot mix and match old programs with new versions of these procedures, or vice versa!

To get the "package" files mentioned above, go to www.mintec.com, login and then navigate to **File Transfer | MineSight® | MineSight® Compass Programs and Procedures**. Then click on **Individual MineSight® Compass Programs** to locate and download the following files:

- **cmpres_package-400.exe** – This self-extracting file contains procedure **cmpres.dat** and programs **clres.exe, clinc.exe**, and **clsum.exe**.
- **modcls_package-400.exe** – This self-extracting file contains procedure **modcls.dat** and programs **gnautocl.exe** and **gnclass.exe**.
- **pitres_package-400.exe** – This self-extracting file contains procedures **pitres.dat**, **pitinc.dat**, **pitsum.dat**, and **pitzon.dat** and programs **mtres.exe**, **mtinc.exe**, and **mtsum.exe**.

Important note: Procedure **pitres.dat** now consists of four files: **pitres.dat** and three subprocedures **pitresa.dat**, **pitresb.dat**, and **pitresc.dat**. All four files must exist together in your **%metlib%** directory.

A new program and procedure **gnzonbld.exe** and **pitzon.dat** can be used to build a zone or seam input file and they are included in the **cmpres** and **pitres** "package" files.

Of course, the file **Since2007UpdateCD.exe** is also available on the website for you to download and it contains all of the MineSight® Compass programs, procedures, and doc files (**.pdf**'s) that have changed since the annual CD was distributed last December. Remember to periodically check the Mintec web site at www.mintec.com to make sure you have the latest MineSight® updates.

The update files can be found at:

FileTransfer | MineSight® | MineSight® Compass Programs and Procedures | Since the 2007 Update CD | List of changes.