

## STANDARD DEVIATION OF MEAN PLOT

### PURPOSE

Generates a subsample standard deviation of the mean versus subsample index plot.

### DESCRIPTION

The subsample standard deviation of the mean is the subsample standard deviation divided by the square root of the subsample size. The standard deviation of the mean plot is used to answer the question: "Does the subsample variation of the mean change over different subsamples?" It consists of:

Vertical axis = subsample standard deviation;  
Horizontal axis = subsample index.

In addition, a horizontal line is drawn representing the full sample standard deviation of the mean. The appearance of the 2 traces is controlled by the first 2 settings of the LINES, CHARACTERS, SPIKES, BARS, and similar attributes.

### SYNTAX

STANDARD DEVIATION OF THE MEAN PLOT <y> <x> <SUBSET/EXCEPT/FOR/qualification>

where <y> is the response (= dependent) variable;

<x> is the subsample identifier variable (this variable appears on the horizontal axis);

and where the <SUBSET/EXCEPT/FOR qualification> is optional.

### EXAMPLES

STANDARD DEVIATION OF THE MEAN PLOT Y X

STANDARD DEVIATION OF THE MEAN PLOT Y X1 SUBSET X1 > 2

### DEFAULT

None

### SYNONYMS

STANDARD DEVIATION OF MEAN PLOT  
SDM PLOT  
STANDARD DEVIATION MEAN PLOT  
SD OF MEAN PLOT  
SD MEAN PLOT

### RELATED COMMANDS

CHARACTERS	=	Sets the type for plot char.
LINES	=	Sets the type for plot lines.
STANDARD DEVIATION PLOT	=	Generates a standard deviation plot.
VARIANCE PLOT	=	Generates a variance plot.
VARIANCE OF MEAN PLOT	=	Generates variance of the mean plot.
RANGE PLOT	=	Generates a range plot.
MEAN PLOT	=	Generates a mean plot.
MEDIAN PLOT	=	Generates a median plot.
BOX PLOT	=	Generates a box plot.
S CHART	=	Generates a standard deviation control chart.
PLOT	=	Generates a data or function plot.

### APPLICATIONS

Quality Control

### IMPLEMENTATION DATE

88/2

PROGRAM

```
SKIP 25  
READ GEAR.DAT DIAMETER BATCH  
LINE BLANK DASH  
CHARACTER X BLANK  
XTIC OFFSET 0.2 0.2  
YILABEL STANDARD DEVIATION OF THE MEAN  
XILABEL BATCH  
TITLE STANDARD DEVIATION OF THE MEAN PLOT  
STANDARD DEVIATION OF THE MEAN PLOT DIAMETER BATCH
```

