R CHART

PURPOSE
Generates a range control chart.

DESCRIPTION
A range control chart is a data analysis technique for determining if a measurement process has gone out of statistical control. The R chart is sensitive to changes in variation in the measurement process. It consists of:

- Vertical axis = the range for each sub-group;
- Horizontal axis = sub-group designation.

In addition, horizontal lines are drawn at the mean range value and at the upper and lower control limits.

SYNTAX
R CHART <y> <x> <SUBSET/EXCEPT/FOR qualification>
where <y> is the response (= dependent) variable (containing the raw data values);
<x> is an independent variable (containing the sub-group identifications);
and where the <SUBSET/EXCEPT/FOR qualification> is optional.

EXAMPLES
R CHART Y X

NOTE 1
The distribution of the response variable is assumed to be normal. This assumption is the basis for calculating the upper and lower control limits.

NOTE 2
The attributes of the 4 traces can be controlled by the standard LINES, CHARACTERS, BARS, and SPIKES commands. Trace 1 is the response variable, trace2 is the mean line, and traces 3 and 4 are the control limits. Some analysts prefer to draw the response variable as a spike or character rather than a connected line.

DEFAULT
None

SYNONYMS
RANGE CHART for R CHART
R CONTROL CHART for R CHART
RANGE CONTROL CHART for R CHART

RELATED COMMANDS
XBAR CHART = Generates a mean control chart.
S CHART = Generates a standard deviation control chart.
P CHART = Generates a p control chart.
NP CHART = Generates a Np control chart.
U CHART = Generates a U control chart.
C CHART = Generates a C control chart.
CHARACTERS = Sets the types for plot characters.
LINES = Sets the types for plot lines.
SPIKES = Sets the on/off switches for plot spikes.
BARS = Sets the on/off switches for plot bars.
PLOT = Generates a data or function plot.
LAG PLOT = Generates a lag plot.
4- PLOT = Generates 4-plot univariate analysis.
RANGE PLOT = Generates a range (vs subset) plot.

APPLICATIONS
Quality Control
IMPLEMENTATION DATE
88/2

PROGRAM
SKIP 25
READ GEAR.DAT DIAMETER BATCH
LINE SOLID SOLID DOT DOT
TITLE AUTOMATIC
X1LABEL GROUP-ID
Y1LABEL RANGE
RANGE CONTROL CHART DIAMETER BATCH