

# CONTROL CHART

PLANT	DEPT.	OPERATION	DATE CONTROL LIMITS CALCULATED	ENGINEERING SPECIFICATION	PART NO.
MACH. NO.	DATES	CHARACTERISTIC		SAMPLE SIZE/FREQUENCY	PART NAME

  

$\bar{X} = \text{Average } \bar{X} =$	$UCL = \bar{X} + A_2 \bar{R} =$	$LCL = \bar{X} - A_2 \bar{R} =$
<b>AVERAGES (<math>\bar{X}</math> BAR CHART)</b>		
$\bar{R} = \text{Average } R =$	$UCL = D_4 \bar{R} =$	$LCL = D_3 \bar{R} =$
<b>RANGES (R CHART)</b>		

  

DATE TIME	1	2	3	4	5	SUM
RE						
EA						
AD						
IN						
GN						
GS						
SUM						

  

$\bar{X}$ * NO. OF READINGS HIGHEST - R = LOWEST					
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**ACTION INSTRUCTIONS**

- 1.
- 2.
- 3.
- 4.
- 5.

**ACTION**  
ON SPECIAL CAUSES

- ANY POINT OUTSIDE OF THE CONTROL LIMITS
- A RUN OF 7 POINTS ALL ABOVE OR ALL BELOW THE CENTRAL LINE
- A RUN OF 7 POINTS UP OR DOWN
- ANY OTHER OBVIOUSLY NON-RANDOM PATTERN

  

SUBGROUP SIZE	A <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>
2	1.88	*	3.27
3	1.02	*	2.57
4	.73	*	2.28
5	.58	*	2.11
6	.48	*	2.00
7	.42	.08	1.92
8	.37	.14	1.86
9	.34	.18	1.82
10	.31	.22	1.78

  

\* For sample sizes of less than seven, there is no lower control limit for ranges.

**THE PROCESS MUST BE IN CONTROL BEFORE CAPABILITY CAN BE DETERMINED.**