

附2: 测量过程监视记录表及控制图

过程名称	卡瓦牙表面硬度检测过程				硬度		硬度(55-62)HRC		测量参数公差范围		2.3HRC		
测量设备	洛氏硬度计				测量范围		(20-70)HRC			最大允许误差		±1.5HRC	
核查标准					标准核查件								
日期:	21/7/12	21/8/12	21/9/13	21/10/13	21/11/14	21/12/16	22/1/15	21/2/16	22/3/15	22/4/14	22/5/15	22/6/16	
测量值	1.0	60.1	60.1	60.2	60.1	60.2	60.1	60.6	60.1	60.1	60.5	60.1	60.1
	2.0	60.4	60.4	60.1	60.1	60.2	60.3	60.1	60.1	60.0	60.1	60.1	60.4
	3.0	60.1	60.1	60.4	60.4	60.3	60.3	60.3	60.3	60.3	60.3	60.3	60.3
	4.0	60.3	60.0	60.2	60.1	60.1	60.1	60.2	60.1	60.1	60.1	60.1	60.1
	5.0	60.1	60.1	60.1	60.0	60.1	60.1	60.1	60.2	60.1	60.1	60.3	60.1
平均值(X)	60.200	60.140	60.200	60.140	60.180	60.180	60.260	60.160	60.120	60.220	60.180	60.200	
极差 (R)	0.30	0.40	0.30	0.40	0.20	0.20	0.50	0.20	0.30	0.40	0.20	0.30	
	$\bar{X}$	60.182		$UCLx=\bar{X}+A_2R$		60.360		A_2	0.577	注: 1) 每次测量数据不少于三个。 2) 每组测量数据数量应统一。			
	$\bar{R}$	0.308		$LCLx=\bar{X}-A_2R$		60.004		D_3	0				
				$UCLr=D_4R$		0.652		D_4	2.114				
				$LCLr=D_3R$		0.000							

均值图

日期	7/16	8/21	9/10	11/20	12/10	1/16	2/25	3/8	4/13	5/24	6/15	7/2
均值	60.18	60.15	60.18	60.15	60.18	60.18	60.25	60.18	60.15	60.22	60.18	60.18

极差图

日期	7/16	8/21	9/10	11/20	12/10	1/16	2/25	3/8	4/13	5/24	6/15	7/2
极差	0.30	0.40	0.30	0.30	0.20	0.20	0.50	0.30	0.30	0.40	0.30	0.30

判定	均值、极差控制图状态正常，测量过程中未出现非正常变异											
定	若有任何一个X值及R值在管制上下限外则不可接受											
判定者:	赵鹏程							审核:	郭连会			