

		CORE PROCESSES							SUPPORT PROCESSES						
EFFECTS FROM HT:		Oil Hardening	Induction	Austempering	Salt to Salt Hardening	Vacuum Hardening	Nitriding	Annealing	Straightening / Clamp Temper	Straightening / Manual Methods	Straightening / By Press	Mechanical / Chemical Cleaning	Packaging Shipping & Delivery	Freeze & Cryogenic	Inspection & Laboratory Testing
Dimensional Distortion		M	M	S	S	M	N	S	-	-	-	N	N	S	N
Cracking		M <sup>2</sup>	M <sup>2</sup>	N	S <sup>2</sup>	S	N	N	M	E <sup>1</sup>	E <sup>1</sup>	N	N	S	N
Physical Damage		S	S	S	S	S	S	S	S	M	M	M	S	S	S
Surface Rust		S <sup>4</sup>	S <sup>4</sup>	S <sup>4</sup>	M <sup>4</sup>	S <sup>4</sup>	S <sup>4</sup>	S <sup>4</sup>	N <sup>4</sup>	N <sup>4</sup>	N <sup>4</sup>	S <sup>4</sup>	S <sup>4</sup>	S <sup>4</sup>	N
Surface Scale		M <sup>3</sup>	M <sup>3</sup>	S	M <sup>3</sup>	S	N	N	N	S	S	N	N	S	N
Discoloration		S <sup>5</sup>	S <sup>5</sup>	S	S <sup>5</sup>	N	N	S	S <sup>5</sup>	S	S	-	N	S	N
Foreign Material		S	N	M	S	N	N	N	N	N	N	N	N	N	N
Legend:	E	EXTREME RISK													
Legend:	M	MODERATE RISK													
Legend:	S	SLIGHT RISK													
Legend:	N	LITTLE TO NO RISK													
Note:	1	RISK BASED ON PART HARDNESS: ROCKWELL "C" SURFACE HARDNESS OF 50 & HIGHER = EXTREME. 40-50 = MODERATE RISK													
Note:	2	HI CARBON AND HI ALLOY STEELS & VARYING SECTION THICKNESSES = HIGHER RISK OF CRACKING DURING QUENCH													
Note:	3	RISK OF SURFACE SCALE IS HIGHER WITH HIGHER TEMPERING TEMPERATURES													
Note:	4	SURFACE CORROSION RISK IS HIGHER DURING HUMID TIME OF THE YEAR.													
Note:	5	DISCOLORATION FROM THE ORIGINAL CONDITION IS GREATER WITH HIGHER TEMPERING TEMP													