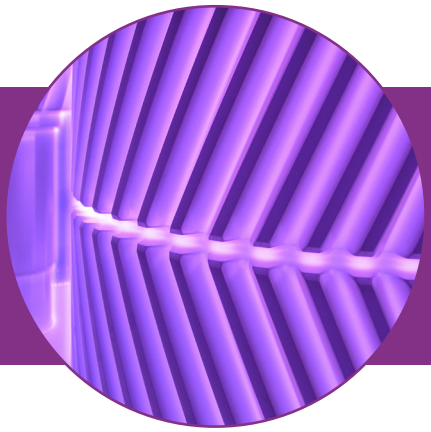
Advanced Heat Treat Corp.

UltraGlow® Ion Nitriding Specifications Procedures

Processing parameter guidelines and minimum results - typical results are higher | Procedure: 9-50 (J1)



Material	As Rec. Hdn. (HRC*)	Minimum Nitrided Surface Hdn. HV1 (HRC*)	Depth of Compound Zone (White Layer)	Eff. Case Depth	Total Case Depth Min.
300 SS	N/A	850 (65)	N/A	N/A	0.0006″
	N/A	850 (65)	N/A	N/A	0.004″
	N/A	850 (65)	N/A	N/A	0.003″
	N/A	850 (65)	N/A	N/A	0.002″
403, 410, 414, 416, 420, 422 & 440 SS	20 - 51	850 (65)	N/A	N/A	0.004″
	20 - 51	850 (65)	N/A	N/A	0.005″
	20 - 51	850 (65)	N/A	N/A	0.009″
	20 - 51	850 (65)	0.0002″ min.	N/A	0.011″
405, 409, 429, 430, 434, 436 & 446 SS	20 - 30	850 (65)	N/A	N/A	0.007″
	20 - 30	850 (65)	N/A	N/A	0.011″
	20 - 30	850 (65)	N/A	N/A	0.009″
NIT 135M	26 - 30	850 (65)	0.0003-0.0004″	0.012″	0.017″
	26 - 30	850 (65)	0.0002-0.0004″	0.006″	0.015″
	26 - 30	850 (65)	0.0002-0.0003″	0.004″	0.013″
	26 - 30	850 (65)	0.0004-0.0006″	0.008″	0.016″
	26 - 30	850 (65)	0.0002-0.0003″	0.006″	0.010″
	26 - 30	850 (65)	0.0001-0.0002″	0.006″	0.014″
NIT 135N	26 - 30	850 (65)	0.0000-0.0003″	0.006″	0.013″
1008, 1010, 1020	20 or less	30-45	0.0003-0.0006″	0.000″	N/A
	20 or less	30-45	0.0002-0.0006″	0.000″	N/A

*Equivalent HRC, typical
**Hardness should be measured with a light load portable hardness tester
***S-Phase, also referred to as supersaturated austenite, improved corrosion resistance

Note: Advanced Heat Treat Corp. can assign an AHT spec. # to your precise customer specifications

UltraGlow® Ion Nitriding Specifications Procedures (cont.)

Material	As Rec. Hdn. (HRC*)	Minimum Nitrided Surface Hdn. HV1 (HRC*)	Depth of Compound Zone (White Layer)	Eff. Case Depth	Total Case Depth Min.
4140, 4142, 4145, 4330, 4340 & 5140 or similar	28 - 34	513 (50)	0.0003-0.0005″	0.006″	0.021″
	28 - 34	513 (50)	0.0002-0.0004″	0.004″	0.018″
	28 - 34	513 (50)	0.0002-0.0003″	0.002″	0.014″
	28 - 34	513 (50)	0.0002-0.0004″	0.004″	0.016″
	36 - 40	513 (50)	0.0001-0.0004″	0.009″	0.014″
	28 - 34	513 (50)	0.0002-0.0005″	0.006″	0.020″
	28 - 34	513 (50)	0.0001-0.0002″	0.002″	0.011″
	28 - 34	513 (50)	0.0002-0.0003″	N/A	0.013″
Inconel 718	30 - 40	595 (55)	N/A	N/A	.0005″
1035, 1040 & 1045 etc.	20-34	50 HRC File Hard min.	0.0001″ min.	N/A	0.010″ min.
	20-34	50 HRC File Hard min.	0.0002-0.0004″	N/A	0.015″ min.
H-Series	44 - 50	697 (60)	0.0002-0.0004″	N/A	0.008″ min.
	44 - 50	697 (60)	0.0000-0.0002″	N/A	0.004″ min.
	44 - 50	697 (60)	0.0001-0.0002″	N/A	0.006″ min.
A, D & CPM Series	60 - 65	697 (60)	0.0000-0.0002″	N/A	0.004″ min.
	60 - 65	697 (60)	0.0000-0.0002″	N/A	0.006″ min.
Ti & a Alloys	N/A	700 HV0.01@0.0005″	0.00005-0.00015″	N/A	0.001″ min.
a & ß Ti Alloys	N/A	700 HV0.01@0.0005″	0.00005-0.00015″	N/A	0.001″ min.
P Series	28 - 32	595 (55)	0.0002-0.0004″	0.010″ min.	0.015″ min.

17-4PH	30 - 40	697 (60)	0.0000-0.0002″	0.002″ min.	N/A
15-4Mo	30 - 40	697 (60)	0.0000-0.0002″	0.004″ min.	N/A
A286	25 - 45	697 (60)	0.0000-0.0001″	0.002″ min.	N/A
F-22	20 or less	595 (55)	0.0001-0.0002″	0.006″	0.008″

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UltraGlow® Ion Nitriding Specifications Procedures (cont.)

Material	As Rec. Hdn. (HRC*)	Minimum Nitrided Surface Hdn. HV1 (HRC*)	Depth of Compound Zone (White Layer)	Eff. Case Depth	Total Case Depth Min.
Cast Mat Unalloyed Irons & Steels (Gray)	20 - 40	513 (50)	0.0004″ min.	N/A	0.004″
	20 - 40	513 (50)	0.0002″ min.	N/A	0.004″
Ductile & Nodular	20 - 40	513 (50)	0.0002″ min.	N/A	0.004″
Alloyed Cast Iron & Steel (GM 190)	22 - 35	595 (55)	0.0002″ min.	0.004″	0.010″
	22 - 35	595 (55)	0.0004″ min.	0.004″	0.015″
NAK 55 & 80	40 - 44	595 (55)	0.0000-0.0002″	0.005″	0.012″
	40 - 44	595 (55)	0.0000-0.0002″	0.003″	0.006″
M-2	55 - 60	865 (66)	0.0000-0.0002″	0.004″	0.005″
	55 - 60	865 (66)	0.0000-0.0001″	0.003″	0.004″
	62 - 65	865 (66)	0.0000-0.0000″	0.001″	0.002″
Finkl FX Finkl WF Finkl FX	35 - 39	595 (55)	0.0002-0.0005″	-	0.020″
	35 - 39	697 (60)	0.0002-0.0005″	-	0.010″
	30 - 35	595 (55)	0.0002-0.0004″	-	0.015″

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