



2135 West Maple Road
Troy, MI 48084-7186

Process Specification

Specification: 7-A
Revision Date: 10/07/2013
Revision Level: J

NORMALIZING - ANNEALING

1.0 General Specification:

Process Specification 1. All the requirements for the general specifications apply unless superseded by the requirements within this specification.

2.0 SCOPE:

This process specification is a recommended guideline only. Its purpose is to improve machinability, and is used at the option of the machining facility.

3.0 PROCESS REQUIREMENTS

PROCESS/GRADES	DESCRIPTION
Normalize B-222-1, B-81	Heat to 1700-1800°F for full austenitization, cool in still or forced air. Resulting hardness 143-179 BHW.
Annealing option for B-79	Heat to 1700°-1800°F for 3.5 hrs. minimum. Cool rapidly to 1100°-1200°F for isothermal transformation. Hold for 6 hrs. minimum at 1220°-1300°F. Cool in air to achieve hardness 145-170 BHW (aim 155-170).
Annealing option for B-222-5, B-222-6, B-222-7 and B-222-8	Heat at 1700°F ± 25°F for 90 minutes min. Cool to 1150-1250°F and hold for 100 minutes minimum. Cool in air to achieve hardness 145-170 BHW (aim 150-165).

4.0 REFERENCE SPECIFICATIONS:

Industry Affiliation	Standard Number and revision Date	Title of Standard
Meritor	1	CONTROL OF HEAT TREATING PROCESSES, FURNACES, AND AUXILIARY EQUIPMENT

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**MERITOR®**

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Date	Change
10/7/2013 Level J Request 33834-1	Add B222-X (SAE 4124 series material), Updated SAE 8620 and 94B17 grades with material spec numbers.
10/05/2008 Level H Request 30272-51	Added General Specification PS 1
10/5/2007 Level G Request 30051-1	Added optional annealing cycle for B222-5
2/5/2006 Level F Request 25813-1	Added optional annealing cycle for B79.
6/15/2001 Level E Request 21206-3	Created an individual document for process specification 7-A. It was originally included on P.S. 7.

Approved By: S. Doyle
Director - Materials Engineering