

**MERITOR®**2135 West Maple Road  
Troy, MI 48084-7121

# Material Specification

Specification: B-47

Revision Date: 05/19/2014

Revision Level: E

## WROUGHT STEEL- SAE 4340H

1.0 GENERAL SPECIFICATION: Material Specification B-1. All the requirements for the general specifications apply unless superseded by the requirements within this specification.

2.0 SCOPE: This specification covers SAE 4340H steel.

3.0 CHEMISTRY:

Chemical Property	Range (wt.%)
Carbon	0.37-0.44
Manganese	0.55-0.90
Silicon	0.15-0.35
Nickel	1.55-2.00
Chromium	0.65-0.95
Molybdenum	0.20-0.30
Phosphorus	0.035 max
Sulfur	0.040 max

4.0 HARDENABILITY: Hardenability shall be restricted to the center 50% of the H-band for Input shaft and Thru shaft and calculated per SAE J406 (2009)

Jominy Distance (1/16 <sup>th</sup> inch)	J4	J8	J12	Requirement Level
HRC MIN	54	54	53	Aim
HRC MAX	58	58	57	Aim

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- 5.0 International Equivalents: The following steels, while not necessarily an exact equivalent of this base specification, can be used as an alternate provided they meet the remainder of the specification in its entirety. Suppliers cannot substitute steels within this specification without prior approval of the using plant quality function.

	CHINA	ENGLAND
	40CrNiMo GB/T 17107 (1997)	817M40 (En24) BS 970-3 (1991)
C	0.37-0.44	0.36-0.44
Mn	0.55-0.80	0.45-0.70
P	0.035 max	0.035 max
S	0.035 max	0.040 max
Si	0.17-0.37	0.10-0.40
Ni	1.25-1.65	1.30-1.70
Cr	0.60-0.90	1.0-1.4
Mo	0.15-0.25	0.20-0.35
Cu	0.30 max	0.30 max

6.0 REFERENCE SPECIFICATIONS:

Industry Affiliation	Standard Number and revision Date	Title of Standard
Meritor	B-1	General Wrought Steel Standard
SAE	J406 (2009)	Methods of Determining Hardenability of Steels.
B.S.	970-3 (1991)	Wrought Steel for Mechanical and Allied Engineering Purposes incl. Amendment 1 and 2.
GB/T	17107 (1997)	Structural Steel Grades for Forgings Mechanical Property

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Date	Change
5/19/2014 Level E Request 30272-179	Reformatted and updated the Header / Footer. Added clarifying sentence to General Specification section. Tabularized Chemistry, Hardenability, and International Specifications. Added method for calculation of J positions. Added Reference Specification section.
11/5/2008 Level D Request 30272-75	Added (1/16 inch) to Jominy Distance
6/15/2002 Level C Request 22296-1	Added British Standard equivalent for slack adjuster worm gear. Revised requirements for international equivalents.
6/15/97 Level B	Added Chinese equivalent for slack adjuster worm gear.
10/15/94 Level A	Added actual chemistry ranges
9/15/87	J Values for input shafts were added

Approved By: S. Doyle  
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