**STEEL, CROSS REFERENCE FOR STANDARD PARTS**

**WSD-M1A283-B1/B8**
**WSD-M1A283-B11**
**WSD-M1A283-B30**
**WSD-M1A283-B33**
**WSD-M1A283-B36/B55**
**WSD-M1A283-B57**
**NOT TO BE USED FOR NEW DESIGN** **WSD-M1A283-B9/B10**
**NOT TO BE USED FOR NEW DESIGN** **WSD-M1A283-B12/B29**
**NOT TO BE USED FOR NEW DESIGN** **WSD-M1A283-B31/B32**
**NOT TO BE USED FOR NEW DESIGN** **WSD-M1A283-B34/B35**
**NOT TO BE USED FOR NEW DESIGN** **WSD-M1A283-B56**

## 1. SCOPE

The materials defined by this specification are alternative national steel specifications related to the International Organization for Standardization classification.

## 2. APPLICATION

This specification was released originally to simplify material choice for fasteners which could be sourced in several countries.

Complete compositional agreement may not exist between the alternates listed but these differences are slight and will not significantly affect manufacture or application.

The abbreviations heading the tables indicate the following:

ISO – International Organization for Standardization
SAE – Society of Automotive Engineers International
EN – Euronorm
ASTM – American Society for Testing and Materials

## 3. REQUIREMENTS

The general quality of manufacture of steel and the wire product for the making of fasteners shall conform to the relevant ISO standard or the equivalent national standard for the country of sourcing. In the absence of a national standard or for referee purposes, the ISO standard applies.

Specific requirements for composition, hardenability, mechanical properties and treatment condition shall conform to the relevant national standards specified in section 3 of this specification.

### 3.1 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

| Date | Action | Revisions |
|---|---|---|
| 2010 10 25 | Revised/ **N-STATUS** | **N-STATUS** WSD-M1A283-B9/B10,B12-B29,B31/B32,B34/B35,B56 No replacement named. See Summary of Revisions. S. Ryzyi, NA |
| 2002 08 19 | Revised | Updated |
| 1986 07 03 | Released | SM/ER3665TC JPC. Lines, EAO |

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### 3.2. COMPARABLE STEELS

| Suffix | Industry Standards | Typical Applications | Composition[a] | Status |
|---|---|---|---|---|
| B1 | ISO 4954 CC 4 X<br>EN 10016-2 C4D<br>SAE J403 UNS G10050 | Bolts, Nuts, clips, Cylinder Head Insert, Brackets | C: 0.06 max<br>Mn: 0.35 max<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.10 max | A |
| B2 | ISO 4954 CC 8 X<br>EN 10016-2 C9D<br>SAE J403 UNS G10080 | Bolts, Nuts, clips, Cylinder Head Insert, Brackets | C: 0.10 max<br>Mn: 0.30-0.50<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.10 max | A |
| B3 | ISO 4954 CC 11 X<br>EN 10016 C10D<br>SAE J403 UNS G10100 | Bolts, Nuts, clips, Cylinder Head Insert, Brackets | C: 0.08-0.13<br>Mn: 0.30-0.60<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.10 max | A |
| B4 | ISO 4954 CC 15 X<br>EN 10016 C15D<br>SAE J403 UNS G10150 | Bolts, Nuts, clips, Cylinder Head Insert, Brackets | C: 0.13-0.18<br>Mn: 0.30-0.60<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.10 max | A |
| B5 | ISO 4954 CC 21 K<br>EN 10016 C20D<br>SAE J403 UNS G10200 | Bolts, Nuts, clips, Brackets | C: 0.18-0.23<br>Mn: 0.30-0.60<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.15-0.35 | A |
| B6 | ISO 4954 CE 20 E4<br>EN 10083 C22E<br>SAE J403 UNS G10220 | Bolts, Nuts, clips, Brackets, Retainers | C: 0.18-0.23<br>Mn: 0.70-1.00<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.40 max | A |
| B7 | ISO 4954 CE 28 E4<br>EN 10083 C30E<br>SAE J403 UNS G10290<br>SAE J403 UNS G10300 | Bolts, Nuts, Washers, | C: 0.25-0.34<br>Mn: 0.60-0.90<br>P: 0.030 max<br>S: 0.050 max<br>Si: 0.40 max | A |
| B8 | ISO 4954 CE 35 E4<br>EN 10083 C35E<br>SAE J403 UNS G10350 | Bolts, Nuts, Rivets, Studs | C: 0.32-0.39<br>Mn: 0.50-0.80<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max | A |
| B9 | EN 10083-1 C45E | Bolts, Nuts, Washers, Rivets | C: 0.40-0.47<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.050 max<br>Si: 0.40 max | N |

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| Suffix | Industry Standards | Typical Applications | Composition[a] | Status |
|---|---|---|---|---|
| B10 | EN 10083-1 C45E<br>SAE J403 UNS G10420 | Nuts, Rivets, Studs | C: 0.40-0.47<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.050 max<br>Si: 0.40 max | N |
| B11 | ISO 4954 CE 45 E4<br>EN 10083 C45E<br>SAE J403 UNS G10450 | Brackets, Nuts, Washers, Bolts, Pins | C: 0.43-0.50<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.050 max<br>Si: 0.40 max | A |
| B12 | DIN SEL 38Cr1 | Nuts | | N |
| B13 | DIN SEL 48Cr1<br>SAE J404 UNS G50460 | Nuts | C: 0.44-0.49<br>Mn: 0.75-1.00<br>P: 0.030 max<br>S: 0.040 max<br>Si: 0.15-0.35<br>Ni: 0.20-0.35 | N |
| B14 | ISO 4954 37 Cr 2 E<br>EN 10083 38Cr2 | Nuts | C: 0.34-0.41<br>Mn: 0.50-0.80<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max<br>Cr: 0.40-0.60 | N |
| B15 | ISO 4954 46 Cr 2 E<br>EN 10083 46Cr2 | Nuts | C: 0.42-0.50<br>Mn: 0.50-0.80<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max<br>Cr: 0.40-0.60 | N |
| B16 | ISO 4954 34 Cr 4 E<br>EN 10083 34Cr4 | Bolts, Nuts | C: 0.30-0.37<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max<br>Cr: 0.90-1.20 | N |
| B17 | ISO 4954 37 Cr 4 E<br>EN 10083 37Cr4 | Nuts | C: 0.34-0.41<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max<br>Cr: 0.90-1.20 | N |
| B18 | ISO 4954 41 Cr 4 E<br>EN 10083 41Cr4 | Nuts | C: 0.38-0.45<br>Mn: 0.60-0.90<br>P: 0.035 max<br>S: 0.035 max<br>Si: 0.40 max<br>Cr: 0.90-1.20 | N |

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