

INTERNATIONAL TRUCK AND ENGINE CORPORATION		
TMS (TRUCK MATERIAL SPECIFICATION)		NUMBER: TMS-9526
TITLE: Axle Housing Weld Specification		REVISION: D
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	DATE ISSUED: June 2007
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<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		
Change Notice: Corrected inch tolerances in Tables 1 and 2; editorial changes.		
Reference: File 14-5, 40-11	Keywords: Axle Housing Welds	

1.0 APPLICATION

This specification covers the welding performed in International facilities for the purpose of adding various brackets and spacers to purchased axle assemblies. This welding specification provides a commercial quality weld for truck applications subject to low-to-moderate stress in service.

2.0 SCOPE

This specification covers the requirements for size and quality of fillet welds used in adding brackets to the axle housing assemblies. The location of joints to be welded shall be designated on the engineering drawing using appropriate symbols and notes in accordance with AWS A2.4 to indicate type, size, length and location of welds as required.

3.0 REFERENCE DOCUMENTS

Unless otherwise specified, the latest issue of all referenced standards shall apply. The following standards, specifications and regulations are referenced in this specification.

Quality System Standard <i>ISO 9001 or TS-16949</i>	AWS A3.0
CFR Title 29, Part 1910	AWS A2.4
INTERNATIONAL Manufacturing Standard D-13	

3.1 Definitions

The welding terms used in this specification shall be interpreted in accordance with the definitions given in AWS Definitions – Welding and Cutting (AWS A3.0). Special conditions shall be fully explained by added notes or details.

4.0 REQUIREMENTS

4.1 Weld Length

Weld length shall be shown on the engineering drawing. Welds shall be acceptable if they are short according to Table 1 and within the limitations imposed by Table 2.

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TABLE 1 – Weld Length Tolerance

<u>Specified Length</u>		<u>Tolerance</u>	
<u>mm</u>	<u>in</u>	<u>mm</u>	<u>in</u>
50 and Under	2 and Under	0.3	0.01
Over 50 Thru 150	Over 2 Thru 6	0.6	0.02
Over 150 Thru 310	Over 6 Thru 12	1.3	0.05
Over 310 Thru 610	Over 12 Thru 24	3.8	0.15
Over 610	Over 24	6.4	0.25

The effective weld length shall not include skips, voids, off-location welds, or any other discontinuities defined in the quality section of this specification.

4.2 Weld Location

Weld shall be designated on the engineering drawing by a welding symbol per AWS A2.4 and shall be located laterally in the joint. When a specified starting or terminal location is shown, the start or end point of the weld shall be within the tolerance shown in Table 2.

TABLE 2 – Weld Location Tolerance

<u>Specified Length</u>		<u>Tolerance</u>	
<u>mm</u>	<u>in</u>	<u>mm</u>	<u>in</u>
50 and Under	2 and Under	± 3	±0.12
Over 50 Thru 150	Over 2 Thru 6	± 6	±0.23
Over 150	Over 6	±13	±0.51

4.2.1 All welds shall be centered laterally in the joint in a manner to insure fusion between the parts being joined. Portions of the weld which are undersize, or do not meet the minimum requirements for quality (undercut, porosity, craters) shall be considered as skips and are not considered in the weld length. When it is required that a weld be hooked or boxed around a corner or end of a joint, it shall be indicated on the engineering drawing and included in the specified length. The hooked portion shall meet minimum undercut requirement and be free from voids, pinholes and craters, as defined in Section 5.0, Quality. Required “No Weld” areas shall be shown on the engineering drawing using a specific note or dimension defining the location of the joint where no welding is permitted.

4.3 Weld Size

The minimum weld leg size on each leg of the fillet welds shall be equal to the specified size, plus the amount of the gap.

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