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INTERNATIONAL
400 Commonwealth Drive, Warrendale, PA 15096-0001

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J2475

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Wheel End Assembly and Axle Spindle Interface Dimensions—Commercial Vehicles

1. ***Scope—***This SAE Recommended Practice contains dimensions and tolerances for spindles in the interface area. Interfacing components include bearing cones, bearing spacers, and wheel hubs. This document is intended for axles commonly used on Class 7 and 8 commercial vehicles. Included are SAE axle configurations FF, R, N, and P. SAE configurations FC, FL, K, L, U, and W are not included, but may be added in the future.

1.1 **Purpose—**The purpose of this document is to establish dimensional guidelines to promote a functional standardization of spindle dimensions for wheel end assemblies. Proper hub component dimensions can then be established.

2. ***References***

2.1 **Related Publications—**The following publication is provided for information purposes only and is not a required part of this document.

2.1.1 SAE PUBLICATION—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

SAE J1842—Axle End Standardization

3. ***Definitions—***A list of basic nomenclature and definitions are shown in 3.1.

3.1 **Feature Definition**

A – Typical Outboard Bearing Cone (per ABMA)
B – Typical Inboard Bearing Cone (per ABMA)
C – Inboard Bearing Cone Spindle Length
D – Spindle Transition Length
E – Outboard Bearing Cone Spindle Starting Length
F – Outboard Bearing Spindle Diameter
G – Spindle Transition Diameter
H – Inboard Bearing Spindle Diameter
R_1 – Spindle Transition Fillet Radius
R_2 – Inboard Bearing Spindle Fillet Radius

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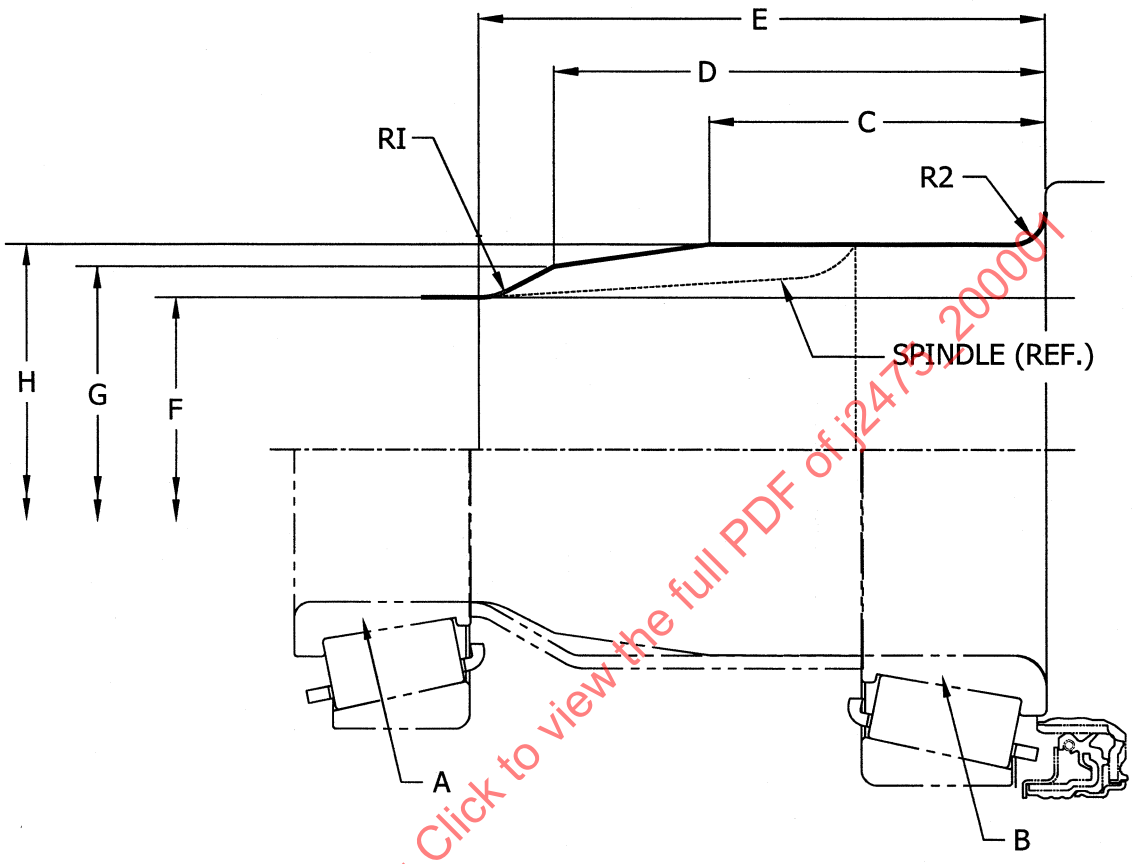
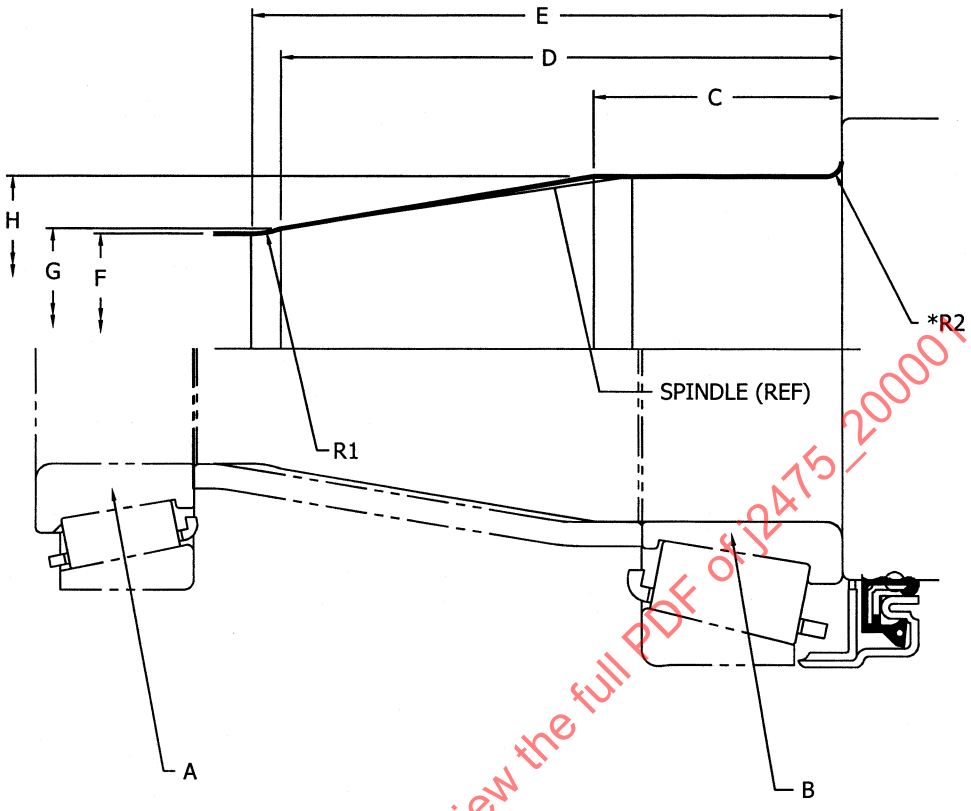
4. ***Procedure—***A line of maximum material is established as shown in the Figures 1 to 3 with dimensions. All dimensions are in millimeters (inches).



SAE CONFIGURATION	A TYPICAL	B TYPICAL	C MAX	D MAX	E MAX	F MAX	G MAX	H MAX	R1 MAX *	R2 MAX
N	HM212049	HM218248	72.90 (2.870)	106.68 (4.200)	122.94 (4.840)	66.68 (2.625)	80.26 (3.16)	89.99 (3.543)	13.46 (0.530)	7.11 (0.280)
P	HM518445	HM518445	N/A N/A	153.42 (6.040)	N/A N/A	88.90 (3.500)	N/A N/A	88.90 (3.500)	N/A N/A	6.35 (0.250)

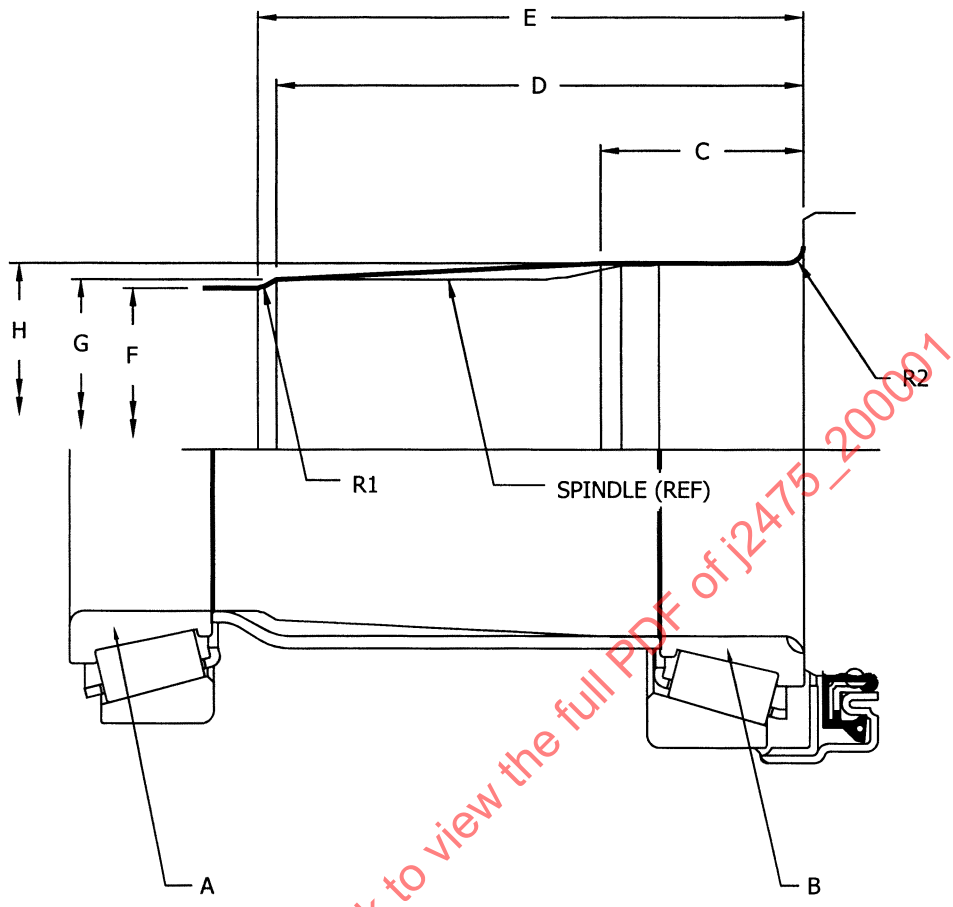
FIGURE 1—TRAILER



SAE CONFIGURATION	A TYPICAL	B TYPICAL	C MAX	D MAX	E MAX	F MAX	G MAX	H MAX	R1 MAX	*R2 MAX
FF	3782	HM212049	45.72 (1.800)	112.52 (4.430)	118.36 (4.660)	44.45 (1.750)	45.72 (1.800)	66.68 (2.625)	15.75 (0.620)	3.56 (0.140)

*R2 = 7.11 (.28) IF B TYPICAL IS HM212049X

FIGURE 2—NON-POWERED FRONT



SAE CONFIGURATION	A TYPICAL	B TYPICAL	C MAX	D MAX	E MAX	F MAX	G MAX	H MAX	R1 MAX	R2 MAX
R	580	594A	85.09 (3.350)	133.86 (5.270)	142.75 (5.620)	82.55 (3.250)	88.90 (3.500)	95.25 (3.750)	7.11 (0.280)	5.08 (0.200)

FIGURE 3—POWERED REAR

PREPARED BY THE SAE TRUCK AND BUS WHEEL SUBCOMMITTEE OF THE
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