



SURFACE VEHICLE RECOMMENDED PRACTICE

J1842™

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Disc Wheel Hub/Spoke Wheel and Axle Interface Dimensions -
Truck and Bus

RATIONALE

This document has been revised to update the reference to the year of publication for ASME Y14.5, so the latest standard is used.

1. SCOPE

This SAE Recommended Practice is intended for hubs and spoke wheels used on Class 6, 7, and 8 truck/truck-tractor non-powered front axles, powered and non-powered rear axles and trailer axles, for which bearing setting is manually adjusted. Assemblies using spacers to control bearing preload and endplay may differ in geometry and bearing componentry.

1.1 Purpose

The purpose of this document is to establish dimensional guidelines to promote functional standardization of wheel hubs and spoke wheels in the areas of fasteners, bearing cup, seal bore and axle drive shaft interface or hubcap attachment. This document is not intended to exclude use of wheel hub designs, which do not meet the dimensional guidelines for use on defined axle configurations.

2. REFERENCES

2.1 Related Publications

The following publications are provided for information purposes only and are not a required part of this SAE Technical Report.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J393 Nomenclature - Wheels, Hubs, and Rims for Commercial Vehicles

SAE J694 Disc Wheel and Hub or Drum Interface Dimensions - Truck and Bus

SAE J923 Nomenclature and Terminology for Truck and Bus Drive Axles

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SAE WEB ADDRESS:

For more information on this standard, visit

https://www.sae.org/standards/content/J1842_202306

SAE J1730 ABS Exciter Ring Location Standardization

SAE J2475 Wheel End Assembly and Axle Spindle Interface Dimensions - Truck and Bus

2.1.2 ISO Publications

Copies of these documents are available online at <https://webstore.ansi.org/>

ISO 4107 Commercial Vehicles - Wheel-Hub Attachment Dimensions

ISO 7575 Commercial Road Vehicles - Flat Attachment Wheel Fixing Nuts

2.1.3 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME Y14.5 Latest revision Dimensioning and Tolerancing

3. DEFINITIONS

A listing of the basic nomenclature and definitions is shown as follows. All dimensions are in millimeters [inches]. A hub shall be defined as a disc wheel hub or the hub area of spoke wheels.

3.1 DEFINITIONS

Figures 1 to 6:

A = Outer Bearing Cup [per American Bearing Manufacturers Association]

B = Inner Bearing Cup [per American Bearing Manufacturers Association]

C = Bearing Cup Spacing

D = Inner Bearing Cup Shoulder to Drive Flange/Hub Cap Interface

E = Inner Seal Bore Diameter

F = Drive Flange Stud/Hub Cap Thread Diameter

G = Number of Drive Flange Studs/Hub Cap Holes

H = Bolt Circle Diameter [Drive Flange Stud/Hub Cap Bolt]

J = Inner Bearing Cup Shoulder to Inner Seal Bore

K = Inner Bearing Cup Shoulder to Inboard End

L = Drive Flange Stud Projected Standout

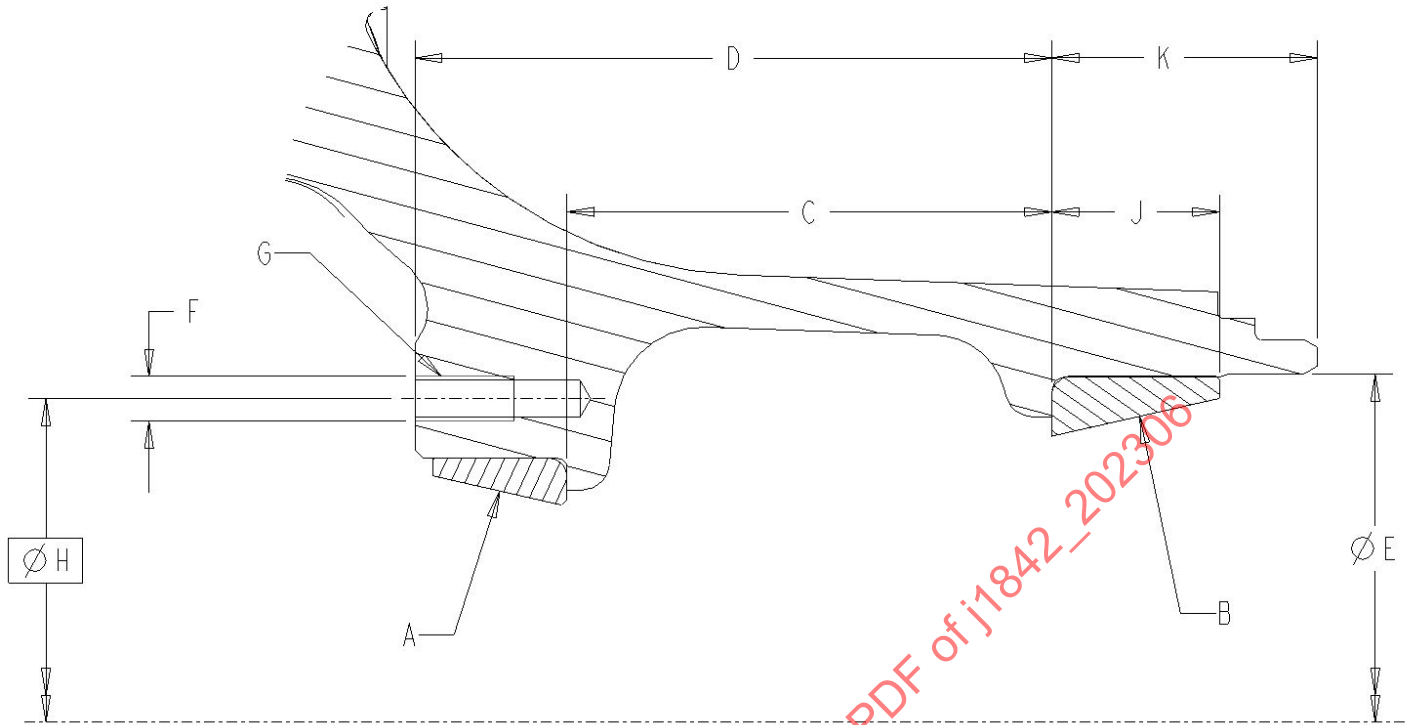
N = Drive Flange Stud Body Diameter

R = Drive Flange Thickness

S = Hole Diameter Drive Flange

T = Angle of Tapered Hole Drive Flange

Y = Drive Flange Interface

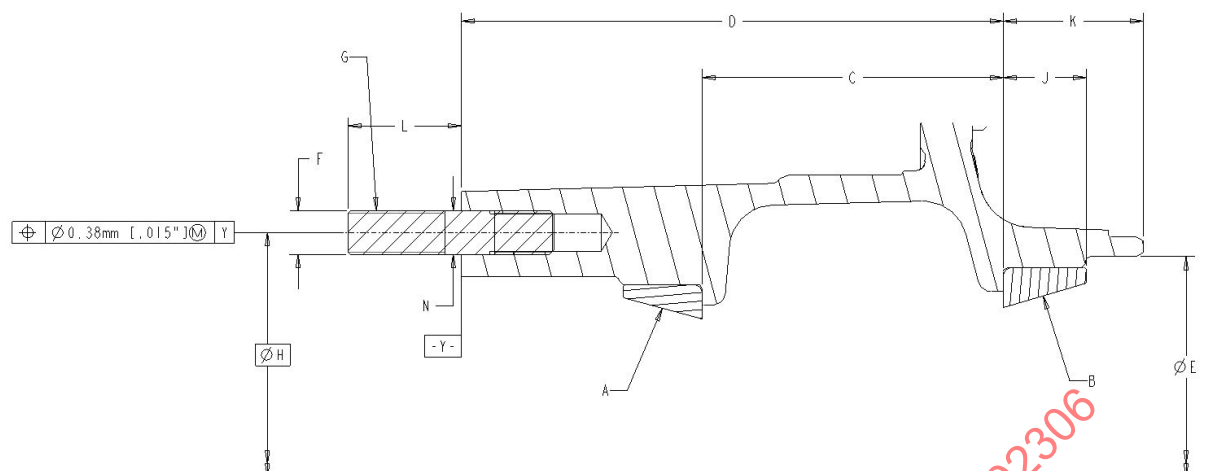


SAE Configuration	A	B	C	D	E ²	F	G	H	J	K
I80	25820	JM207010	74.2 mm [2.92 inches]	110.7 mm [4.36 inches]	98.42 mm [3.875 inches]	5/16-18	4	91.95 mm [3.62 inches]	24.6 mm [0.97 inch]	44.50 mm [1.75 inches]
FC	3525	39520	81.8 mm [3.22 inches]	116.8 mm [4.60 inches]	115.32 mm [4.540 inches]	5/16-18	6	114.30 mm [4.50 inches]	23.9 mm [0.94 inch]	38.90 mm [1.53 inches]
FF	3720	HM212011	85.9 mm [3.38 inches]	112.5 mm [4.43 inches]	122.94 mm [4.840 inches]	5/16-18	6	114.30 mm ¹ [4.50 inches]	29.2 mm [1.15 inches]	46.50 mm [1.83 inches]
FL	552A	6420	77.0 mm [3.03 inches]	122.9 mm [4.84 inches]	149.86 mm [5.900 inches]	5/16-18	6	139.70 mm [5.50 inches]	43.2 mm [1.70 inch]	56.84 mm [2.24 inches]

¹ 139.70 mm [5.50 inches] is commonly used with "D" of 139.7 mm [5.50 inches].

² Nonferrous hubs may require a different dimension due to differences in thermal expansion rates compared to ferrous hubs.
All dimensions are nominal unless otherwise specified.

Figure 1 - Nonpowered front hub/wheel



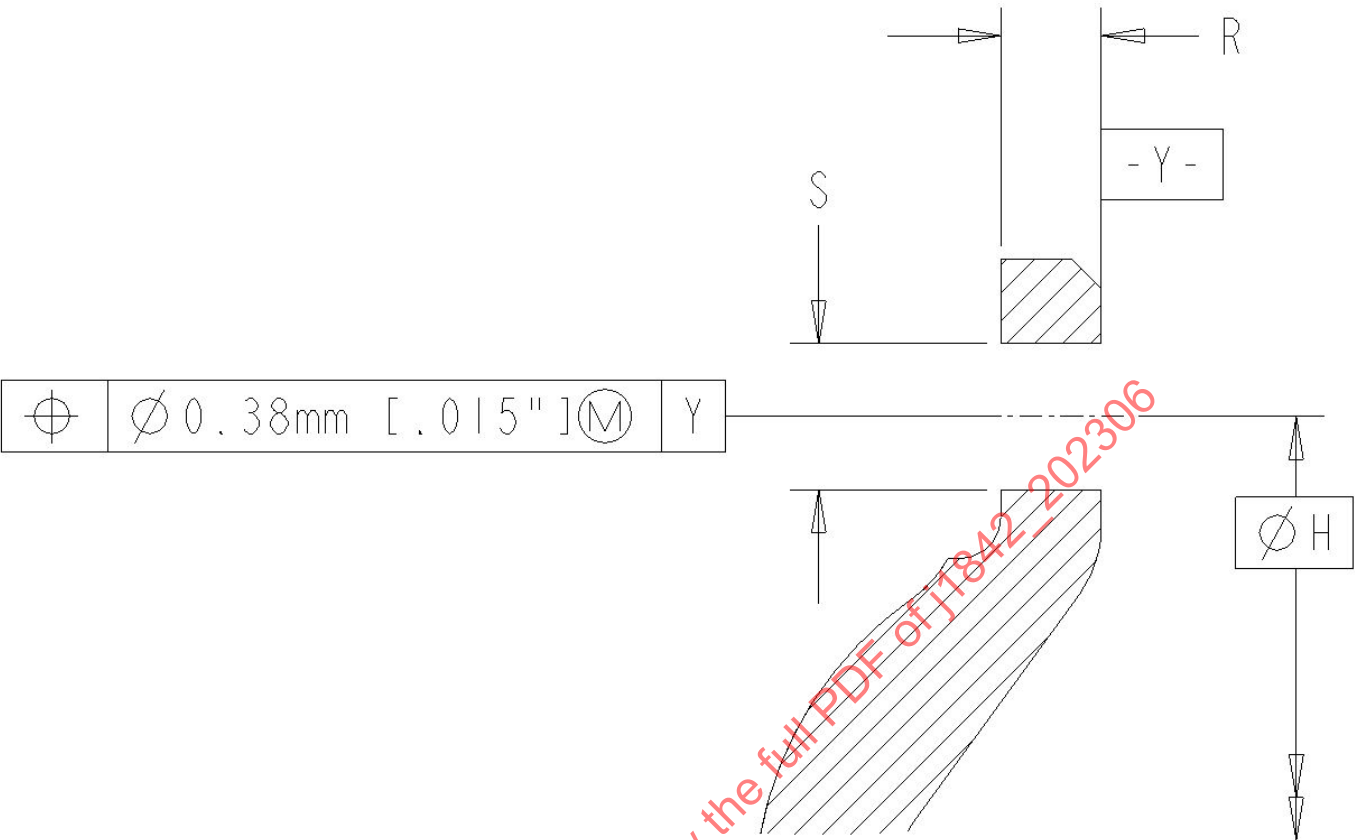
SAE Configuration	A	B	C	D	E ¹	F	G	H	J	K
L	39520	47620	117.4 mm [4.62 inches]	185.7 mm [7.31 inches]	144.53 mm [5.690 inches]	1/2-20	12	133.35 mm [5.25 inches]	36.6 mm [1.44 inches]	58.7 mm [2.31 inches]
Alternate L	39520	47620	117.4 mm [4.62 inches]	185.7 mm [7.31 inches]	144.53 mm [5.690 inches]	5/8-18	8	139.7 mm [5.50 inches]	36.6 mm [1.44 inches]	58.7 mm [2.31 inches]
LONG R 3/4-16 Drive Studs	572	592A	109.5 mm [4.31 inches]	196.9 mm [7.75 inches]	160.27 mm [6.310 inches]	3/4-16	8	177.8 mm [7.00 inches]	30.0 mm [1.18 inches]	50.8 mm [2.00 inches]
SHORT R 3/4-16 Drive Studs	572	592A	109.5 mm [4.31 inches]	175.3 mm [6.90 inches]	160.27 mm [6.310 inches]	3/4-16	8	177.8 mm [7.00 inches]	30.0 mm [1.18 inches]	50.8 mm [2.00 inches]
LONG R 5/8-18 Drive Studs	572	592A	109.5 mm [4.31 inches]	196.9 mm [7.75 inches]	160.27 mm [6.310 inches]	5/8-18	8	177.8 mm [7.00 inches]	30.0 mm [1.18 inches]	50.8 mm [2.00 inches]
SHORT R 5/8-18 Drive Studs	572	592A	109.5 mm [4.31 inches]	175.3 mm [6.90 inches]	160.27 mm [6.310 inches]	5/8-18	8	177.8 mm [7.00 inches]	30.0 mm [1.18 inches]	50.8 mm [2.00 inches]
U	742	772	138.2 mm [5.44 inches]	220.2 mm [8.67 inches]	184.15 mm [7.250 inches]	5/8-18	8	177.8 mm [7.00 inches]	38.1 mm [1.50 inches]	61.2 mm [2.41 inches]
W	6535	772	149.4 mm [5.88 inches]	240.8 mm [9.48 inches]	190.50 mm [7.500 inches]	5/8-18	8	184.2 mm [7.25 inches]	45.2 mm [1.78 inches]	67.1 mm [2.64 inches]

¹ Nonferrous hubs may require a different dimension due to differences in thermal expansion rates compared to ferrous hubs.

SAE Configuration	L Minimum	N Maximum
L	33.3 mm [1.31 inches]	12.70 mm [0.500 inch]
Alternate L	33.3 mm [1.31 inches]	15.88 mm [0.625 inch]
LONG R 3/4-16 Drive Studs	39.6 mm [1.56 inches]	19.05 mm [0.750 inch]
SHORT R 3/4-16 Drive Studs	39.6 mm [1.56 inches]	19.05 mm [0.750 inch]
LONG R 5/8-18 Drive Studs	38.10 mm [1.500 inches]	15.88 mm [0.625 inch]
SHORT R 5/8-18 Drive Studs	38.10 mm [1.500 inches]	15.88 mm [0.625 inch]
U	39.88 mm [1.570 inches]	15.88 mm [0.625 inch]
W	38.10 mm [1.500 inches]	15.88 mm [0.625 inch]

All dimensions are nominal unless otherwise specified.

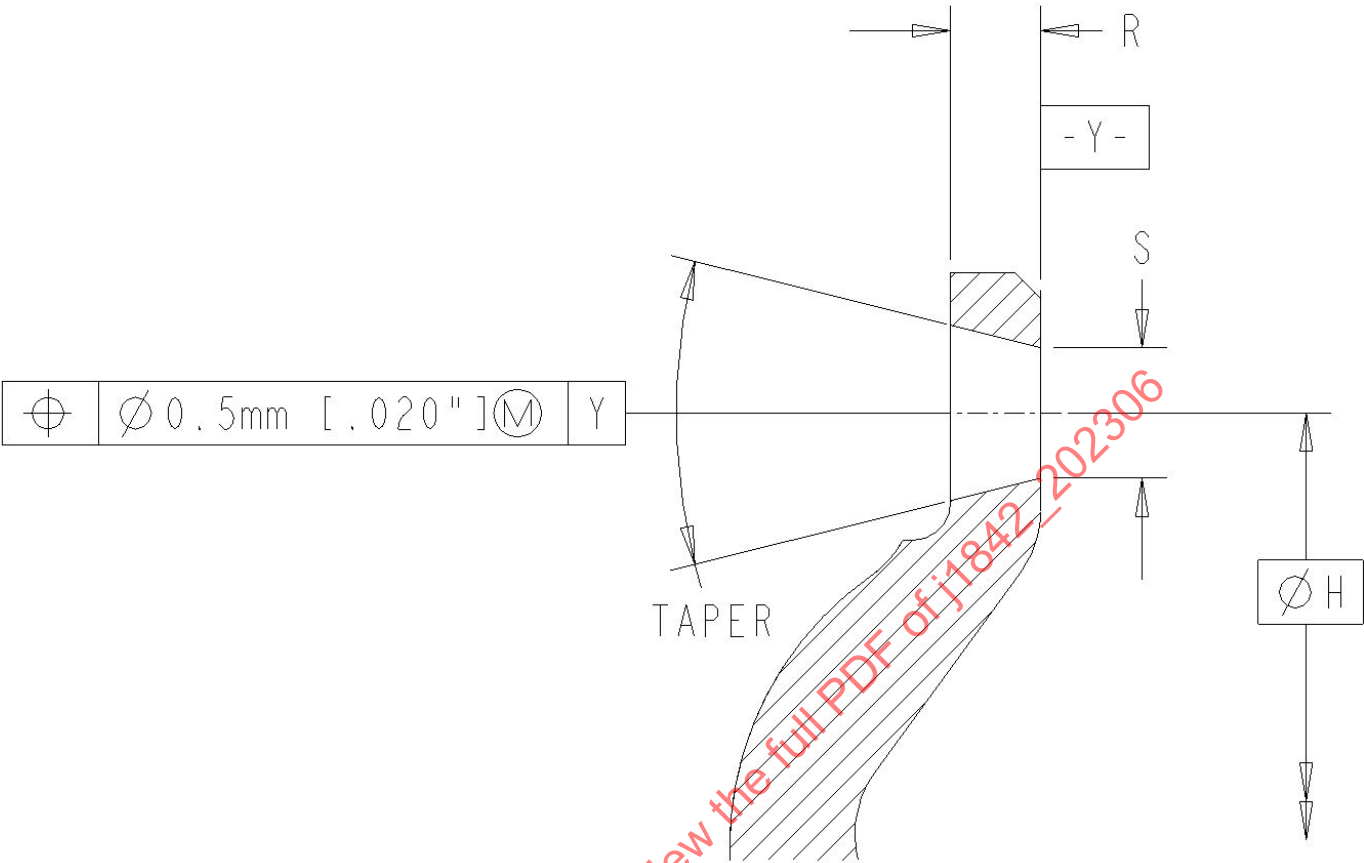
Figure 2 - Powered rear hub/wheel



G*	H	N*	R Maximum	S Minimum
8	139.7 mm [5.500 inches]	15.88 mm [0.625 inch]	10.82 mm [0.426 inch]	16.26 mm [0.640 inch]
8	177.8 mm [7.000 inches]	15.88 mm [0.625 inch]	14.78 mm [0.582 inch]	16.64 mm [0.655 inch]
8	177.8 mm [7.000 inches]	19.05 mm [0.750 inch]	14.78 mm [0.582 inch]	19.82 mm [0.780 inch]
8	184.0 mm [7.244 inches]	15.88 mm [0.625 inch]	14.30 mm [0.563 inch]	16.26 mm [0.640 inch]
8	184.0 mm [7.244 inches]	19.05 mm [0.750 inch]	14.30 mm [0.563 inch]	19.76 mm [0.778 inch]

* From Figure 2.
All dimensions are nominal unless otherwise specified.

Figure 3 - Powered rear drive flange with straight holes



G	H*	N*	R Maximum	S Minimum	T
12	133.35 mm [5.25 inches]	12.7 mm [0.500 inch]	10.82 mm [0.426 inch]	14.68 mm [0.578 inch]	28 degrees
8	177.8 mm [7.000 inches]	15.88 mm [0.625 inch]	14.78 mm [0.582 inch]	18.64 mm [0.734 inch]	28 degrees

* From Figure 2.
All dimensions are nominal unless otherwise specified.

Figure 4 - Powered rear drive flange with tapered holes