



SURFACE VEHICLE STANDARD

J530™

FEB2024

Issued 1948-02
Reaffirmed 2018-03
Revised 2024-02

Superseding J530 MAR2018

Automotive Pipe Fittings

RATIONALE

This standard has been revised to include minimum working pressure and burst pressure requirements. This adds some needed clarification to the scope statement of low or medium pressures.

1. SCOPE

This SAE Standard includes complete general and dimensional specifications for those types of pipe fittings commonly used in the automotive and other mass production industries where the use of lubricants or sealers is objectionable. The automotive pipe fittings shown in Figures 1 to 17 and Tables 1 to 6 are intended for general automotive and similar applications involving low or medium pressures or in conjunction with automotive tube fittings in piping systems.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

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 J343	Test and Test Procedures for SAE 100R Series Hydraulic Hose and Hose Assemblies
SAE J476	Dryseal Pipe Threads
SAE J846	Coding Systems for Identification of Fluid Conductors and Connectors
SAE J1615	Thread Sealants

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2024 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE J530_202402

For more information on this standard, visit
https://www.sae.org/standards/content/J530_202402

Documents
Document Sharing Hub

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM B117 Method of Salt Spray (Fog) Testing

3. AUTOMOTIVE PIPE FITTINGS

3.1 Automotive Pipe Fittings

NOTE: Unspecified detail with respect to dimensions, tolerances, contours, material, workmanship, etc., must conform to general specifications for automotive pipe fittings. Codes shown in brackets adjacent to figure numbers represent respective fitting identification in accordance with SAE J846 (February 1979).

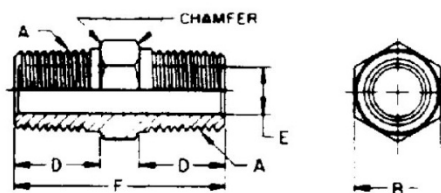


Figure 1 - Hexagon nipple (130137)

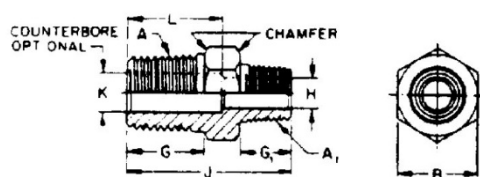


Figure 2 - Hexagon reducer nipple (130137)

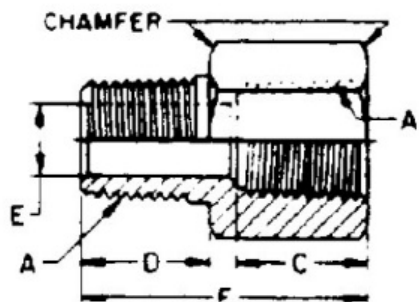


Figure 3 - Adapter (130139)

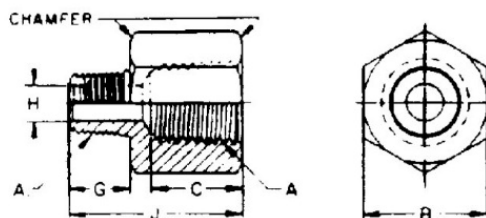


Figure 4 - Reducer adapter (130139)

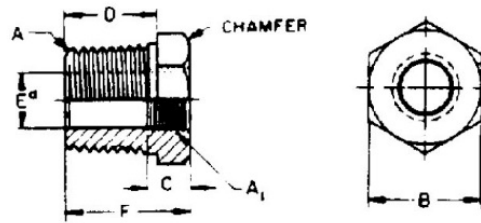


Figure 5 - Reducer bushing (130140)

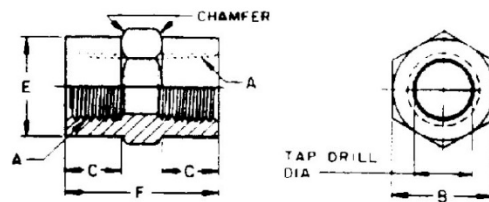


Figure 6 - Coupling (130138)

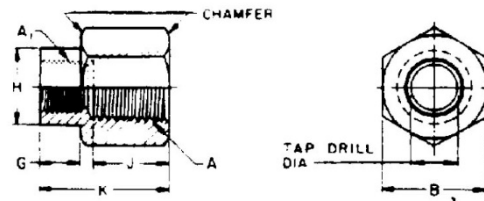


Figure 7 - Reducer coupling (130138)

Table 1 - Dimensions of hexagon nipples and reducer nipples (Figures 1 and 2)

Dryseal Taper Thread NPTF ⁽¹⁾ in A Hexagon Nipples	Dryseal Taper Thread NPTF ⁽¹⁾ in A x A ₁ Hexagon Reducer Nipples	All Nipples B Hexagon Width Max mm	All Nipples B Hexagon Width Max in	All Nipples B Hexagon Width Min mm	All Nipples B Hexagon Width Min in	Nipples D Shoulder Length ⁽²⁾ mm	Nipples D Shoulder Length ⁽²⁾ in	Nipples E Drill Dia mm	Nipples E Drill Dia in	Nipples F Overall Length ⁽²⁾ mm	Nipples F Overall Length ⁽²⁾ in
1/16–27	—	8.03	0.316	7.87	0.310	9.7	0.38	3.58	0.141	23.9	0.94
1/8–27	1/8 x 1/16	11.18	0.440	11.02	0.434	9.7	0.38	5.56	0.219	24.6	0.97
1/4–18	1/4 x 1/8	14.38	0.566	14.17	0.558	14.2	0.56	7.92	0.312	35.1	1.38
3/8–18	3/8 x 1/8	17.58	0.692	17.37	0.684	14.2	0.56	11.13	0.438	35.8	1.41
—	3/8 x 1/4	17.58	0.692	17.37	0.684	—	—	—	—	—	—
1/2–14	1/2 x 3/8	22.33	0.879	22.12	0.871	19.0	0.75	14.27	0.562	46.0	1.81 0

Dryseal Taper Thread NPTF ⁽¹⁾ in A x A ₁ Hexagon Reducer Nipples	Reducer Nipples G Shoulder Length ⁽²⁾ Min mm	Reducer Nipples G Shoulder Length ⁽²⁾ Min in	Reducer Nipples G ₁ Shoulder Length ⁽²⁾ Min mm	Reducer Nipples G ₁ Shoulder Length ⁽²⁾ Min in	Reducer Nipples H Drill Dia ⁽³⁾ mm	Reducer Nipples H Drill Dia ⁽³⁾ in	Reducer Nipples J Overall Length ⁽²⁾ mm	Reducer Nipples J Overall Length ⁽²⁾ in	Reducer Nipples Counterbore K Max Dia ⁽³⁾ mm	Reducer Nipples Counterbore K Max Dia ⁽³⁾ in	Reducer Nipples Counterbore L Max Depth ^{(2),(3)} mm	Reducer Nipples Counterbore L Max Depth ^{(2),(3)} in
1/8 x 1/16	9.7	0.38	9.7	0.38	3.58	0.141	24.6	0.97	5.66	0.223	11.9	0.47
1/4 x 1/8	14.2	0.56	9.7	0.38	5.56	0.219	30.2	1.19	8.08	0.310	17.5	0.69
3/8 x 1/8	14.2	0.56	9.7	0.38	5.56	0.219	31.0	1.22	11.28	0.444	17.5	0.69
3/8 x 1/4	14.2	0.56	14.2	0.56	7.92	0.312	35.8	1.41	11.28	0.444	17.5	0.69
1/2 x 3/8	19.0	0.75	14.2	0.56	11.13	0.438	41.1	1.62	14.43	0.568	23.1	0.91

1. Dryseal American Standard Taper Pipe Thread. See General Specifications.

2. Where SAE Short Pipe Thread is authorized by purchaser, dimensions D, F, G, G₁, J, and L are reduced in accordance with reduction of pipe thread length. See General Specifications.

3. At manufacturer's option, through passages may conform with the smaller diameter specified or be counterbored to the larger diameter for the depth specified.

Table 2 - Dimensions of adapters and reducer adapters (Figures 3 and 4)

Dryseal Taper Thread NPTF ⁽¹⁾ in A Adapters	Dryseal Taper Thread NPTF ⁽¹⁾ in A x A ₁ Reducer Adapters	All Adapters B Hexagon Width Max mm	All Adapters B Hexagon Width Max in	All Adapters B Hexagon Width Min mm	All Adapters B Hexagon Width Min in	All Adapters C Tap Drill Depth ^{(2),(3)} Min mm	All Adapters C Tap Drill Depth ^{(2),(3)} Min in	Adapters D Shoulder Length ⁽²⁾ Min mm	Adapters D Shoulder Length ⁽²⁾ Min in	Adapters E Dia Drill mm	Adapters E Dia Drill in
1/16-27	—	11.18	0.440	11.02	0.434	9.7	0.38	9.7	0.38	3.58	0.141
1/8-27	1/8 x 1/16	14.38	0.566	14.17	0.558	9.7	0.38	9.7	0.38	5.56	0.219
1/4-18	1/4 x 1/8	19.15	0.754	18.95	0.746	14.2	0.56	14.2	0.56	7.92	0.312
3/8-18	3/8 x 1/4	22.33	0.879	22.12	0.871	14.2	0.56	14.2	0.56	11.13	0.438
1/2-14	1/2 x 3/8	27.13	1.068	26.87	1.058	19.0	0.75	19.0	0.75	14.27	0.562
3/4-14	3/4 x 1/2	35.05	1.380	34.80	1.370	19.0	0.75	19.0	0.75	19.05	0.750
1-11-1/2	1 x 3/4	41.40	1.630	41.15	1.620	23.9	0.94	23.9	0.94	23.82	0.938

Dryseal Taper Thread NPTF ⁽¹⁾ in A Adapters	Dryseal Taper Thread NPTF ⁽¹⁾ in A x A ₁ Reducer Adapters	Adapters F Overall Length ^{(2),(3)} mm	Adapters F Overall Length ⁽²⁾ in	Reducer Adapters G Shoulder Length ⁽²⁾ Min mm	Reducer Adapters G Shoulder Length ⁽²⁾ Min in	Reducer Adapters H Dia Drill mm	Reducer Adapters H Dia Drill in	Reducer Adapters J Overall Length ⁽²⁾ mm	Reducer Adapters J Overall Length ⁽²⁾ in
1/16-27	—	21.3	0.84	—	—	—	—	—	—
1/8-27	1/8 x 1/16	22.4	0.88	9.7	0.38	3.58	0.141	21.3	0.84
1/4-18	1/4 x 1/8	31.8	1.25	9.7	0.38	5.56	0.219	26.9	1.06
3/8-18	3/8 x 1/4	31.8	1.28	14.2	0.56	77.92	0.312	31.8	1.25
1/2-14	1/2 x 3/8	42.2	1.66	14.2	0.56	11.13	0.438	37.3	1.47
3/4-14	3/4 x 1/2	42.9	1.69	19.0	0.75	14.27	0.562	42.9	1.69
1-11-1/2	1 x 3/4	52.3	2.06	19.0	0.75	19.05	0.750	47.8	1.88

1. Dryseal American Standard Taper Pipe Thread. See General Specifications.

2. Where SAE SHORT Pipe Thread is authorized by purchaser, dimensions C, F, G, and J are reduced in accordance with reduction of pipe thread length. See General Specifications.

3. Tap drill depths given require use of bottoming taps to produce standard full thread lengths. See General Specifications.

3.2 Automotive Pipe Fittings - Cast Type

NOTE: Unspecified detail with respect to dimensions, tolerances, contours, material, workmanship, etc., must conform to general specifications for automotive pipe fittings. The dimensional designations on the first figure in each group shall apply to all other figures in that group except as shown otherwise. Codes shown in brackets adjacent to figure numbers represent respective fitting identification in accordance with SAE J846 (February 1979).

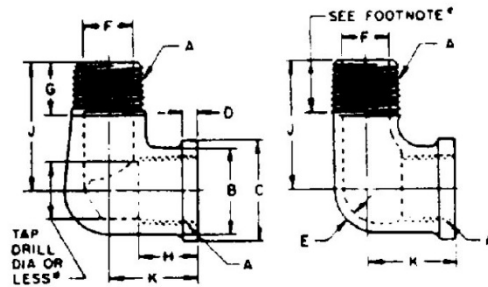


Figure 8 - 90-degree street elbows (130239)

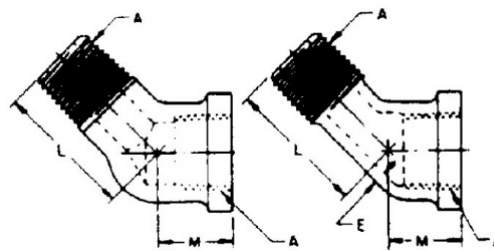


Figure 9 - 45-degree street elbows (130339)

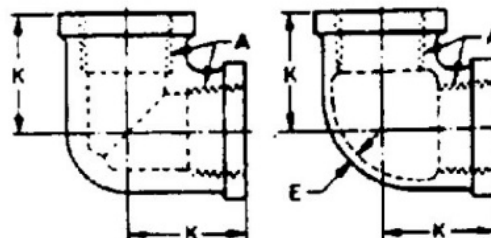


Figure 10 - 90-degree pipe elbows (130238)

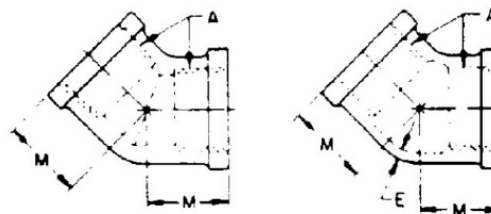


Figure 11 - 45-degree pipe elbows (130338)