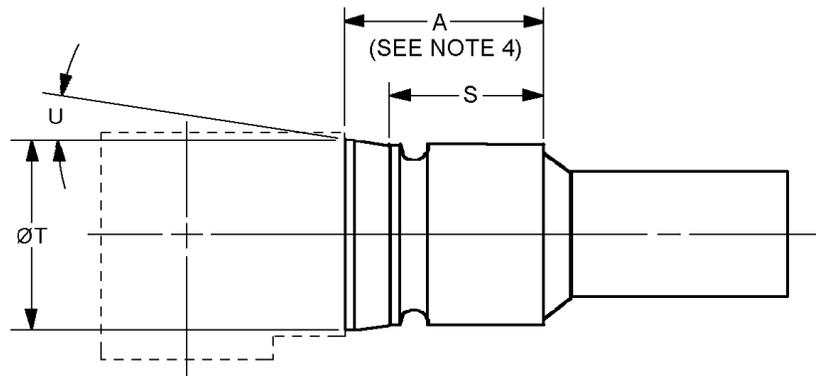
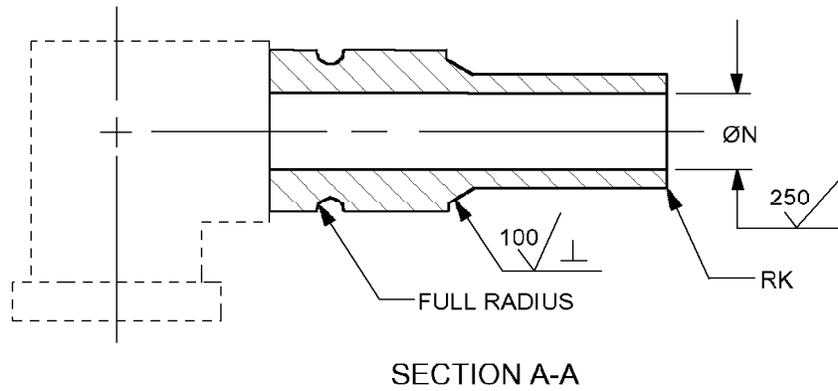


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-12 THRU -24 SIZE ONLY

Size and material code		A min (see note 4)	C		D + .005 -.000	
Corrosion resistant steel (CRES)	Aluminum (Al)				CRES	Al
-8C	-8D	.617	.098	+ .004	.385	.385
-10C	-10D	.654		- .000	.420	.427
-12C	-12D	.755	.128	+ .005 - .000	.500	.500
-16C	-16D	.831			.545	.545
-20C	-20D	.881			.565	.571
-24C	-24D	1.035			.665	.665

FIGURE 1. Elbow illustration - Continued.

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Size and material code		F dia.		G dia +.005 -.000	H dia. ±.005	J dia (see notes 4 and 5) +.005 -.000	K	
CRES	AI							
-8C	-8D	.497	+.005 -.000	.426	.530	.616	.020	+.005 -.000
-10C	-10D	.586		.526	.625	.706		
-12C	-12D	.674		.650	.760	.826		
-16C	-16D	1.001	+.008 -.000	.900	1.040	1.150	.030	±.005
-20C	-20D	1.255		1.151	1.275	1.405		
-24C	-24D	1.490		1.401	1.550	1.635	.035	

Size and material code		L		M (see note 5)	N dia.		
CRES	AI				CRES	AI	
-8C	-8D	.600	±.015	.583	.345	.345	+.006 -.000
-10C	-10D	.650		.620	.440	.440	
-12C	-12D	.675		.720	.560	.560	
-16C	-16D	.730	.796	.828	.828		
-20C	-20D	.935	±.025	.846	1.058	1.058	
-24C	-24D	.980		1.000	1.253	1.282	+.005 -.000

Size and material code		P ±.035	Q ±.035	S ±.010	T max	U max
CRES	AI					
-8C	-8D	1.135	.892	---	---	---
-10C	-10D	1.315	.896	---	---	---
-12C	-12D	1.808	1.156	.625	.900	15°30'
-16C	-16D	1.901	1.282	.670	1.190	10°30'
-20C	-20D	2.180	1.500	.695	1.485	15°30'
-24C	-24D	2.500	1.688	.795	1.750	

NOTES:

1. Any bent tube design of the elbow to the left of plane B-B is acceptable provided the dimensions of P and Q and the requirements of this specification sheet and the procurement specification are met.
2. The inside diameter (ID) of the elbow shall not be less than the ID of the nipple end of the elbow.
3. Ovality shall not exceed 7.5 percent of the nominal tubing outside diameter (OD).
4. Use A dimension when the adjacent diameter to the left of plane B-B is greater than J dimension.
5. When the adjacent diameter is equal to or less than J dimension, M dimension may be used in place of A dimension.
6. Surface roughness. Unless otherwise specified, maximum surface roughness shall not exceed 125 µin. R_a in accordance with ASME B46.1.
7. Unless otherwise specified, break or radius all corners .005, +.005, -.000.
8. All diameters within length A plus L must be concentric within .005 full indicator movement.
9. Remove all burrs and slivers.

FIGURE 1. Elbow illustration - Continued.

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REQUIREMENTS

Elbow illustration. See figure 1.

Intended use. This part is a component of MS27066. This is a design standard for manufacturing purposes. The item is only procured as an integral part of adapter assemblies.

Materials. Material and material codes see table I.

TABLE I. Materials and material codes.

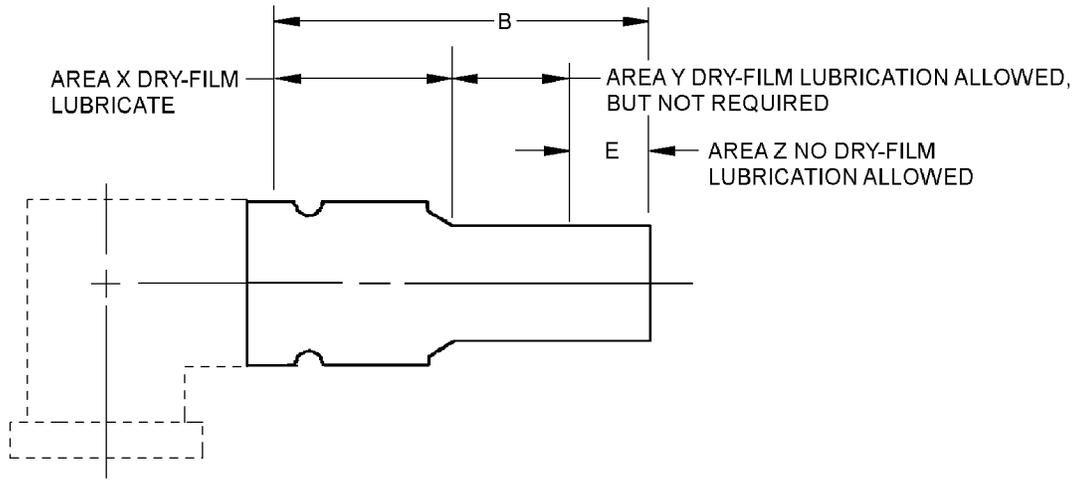
Material code	Material
C	Corrosion-resistant steel (CRES), class 304 or 321 cold drawn or cold rolled in accordance with SAE-AMS-QQ-S-763, SAE-AMS5639, or SAE-AMS5645.
D	Aluminum alloy, 6061-T6 or T651 in accordance with SAE-AMS-QQ-A-367, SAE-AMS4117 or alloy 7075-T73, 7075-T7351 in accordance with SAE-AMS-QQ-A-225/9 or alloy 7055-T7351 in accordance with SAE-AMS4124.

Finish. Corrosion-resistant steel, passivate in accordance with SAE-AMS-2700, method 1, type 6 or 7. Dry-film lubricate area X, see figure 2 and table II.

Aluminum alloy. Anodize in accordance with MIL-A-8625, type II, dye blue.

NOTE: Avoid using graphite dry film lubes with aluminum nipples because in a wet environment, graphite becomes corrosive to the aluminum.

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Size and material code		B min	E	
CRES	Al			
-8C	-8D	1.030	.32	±.12
-10C	-10D	1.130	.35	±.15
-12C	-12D	1.240		
-16C	-16D	1.340	.39	±.19
-20C	-20D	1.570	.48	±.28
-24C	-24D	1.720	.50	±.30

FIGURE 2. Dry-film lubrication area.

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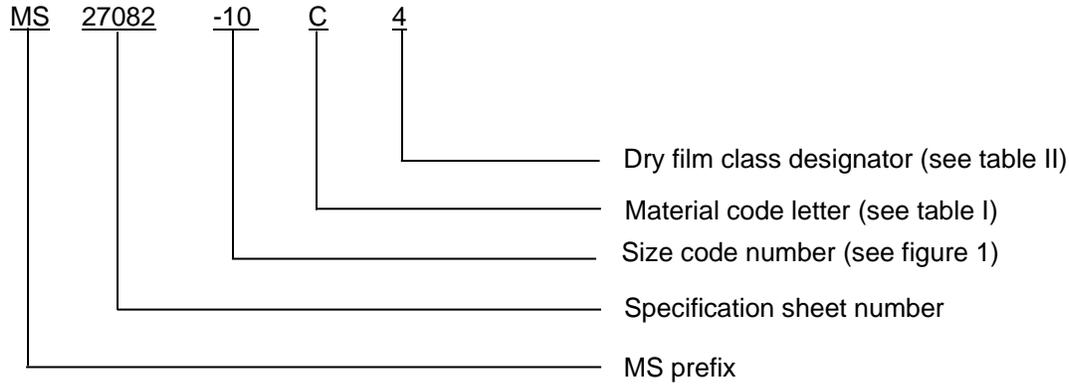
TABLE II. Dry film designator.

Dry film designator	SAE class or type designator	Dry film characteristics
Blank	Any SAE class or type below	N/A
SAE-AS1701	SAE-AS1701 class	SAE-AS1701 temperature ranges °F (°C)
4	4	-65° to +1400°F (-54° to 760°C)
5	5	-65° to +850°F (-54° to 454°C)
6	6	-375° to +850°F (-226° to 454°C)
SAE-AS5272	SAE-AS5272 type	SAE-AS5272 temperature ranges. °F (°C)
7	Type I	-90° to 400°F (-68 to 204°C) endurance life of 250 min minimum
8	Type II	-90° to 400°F (-68° to 204°C) endurance life of 450 min minimum
9	Type III	Color 1 - Natural product color -90° to 400°F (-68 to 204°C) low Volatile organic compound with an endurance life of 450 min minimum
10	Type III	Color 2 - Black color -90° to 400°F (-68 to 204°C) low Volatile organic compound with an endurance life of 450 min minimum
Dry film designator	MIL classification	Dry film characteristics
MIL-PRF-46010 1/	---	MIL-PRF-46010 temperature ranges. °F (°C)
11	1	Color 1 natural product color, -90° to 400°F (-68 to 204°C) solvent resisting
12	2	Color 2 - Black color -90° to 400°F (-68 to 204°C) solvent resisting

1/ Not for aerospace usage.

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PIN: The PIN consists of prefix "MS", the specification sheet number, dash number for 90° elbow size, letter for material, and a blank or number for dry film lubricant. Unassigned PIN's shall not be used.



PIN examples:

- MS27082-10D indicates a 90° elbow size 10, aluminum and dry film class designator "blank"..
- MS27082-10C indicates a 90° elbow size 10, CRES and dry film class designator "blank".
- MS27082-10C4 indicates a 90° elbow size 10, CRES with dry film class designator 4.

Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

Referenced documents shall be of the issue in effect on date of invitations for bid.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue, due to the extent of the changes.

Referenced documents. In addition to MIL-DTL-27272, this document references the following:

MIL-PRF-46010	SAE-AMS2700
MIL-A-8625	SAE-AMS4117
MS27066	SAE-AMS4124
ASME B46.1	SAE-AMS5639
SAE-AMS-QQ-A-367	SAE-AMS5645
SAE-AMS-QQ-S-763	SAE-AS1701
SAE-AMS-QQ-A-225/9	SAE-AS5272

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CONCLUDING MATERIAL

Custodians:

Army - AV
Navy - AS
Air Force - 99
DLA - CC

Preparing activity:

DLA - CC

Project 4730-2013-106)

Review activities:

Army - AR, AT, MI
Navy - MC, SA, SH
Air Force - 71

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil>.