

INCH-POUND

MS27086C

25 September 2003

SUPERSEDING

MS27086B

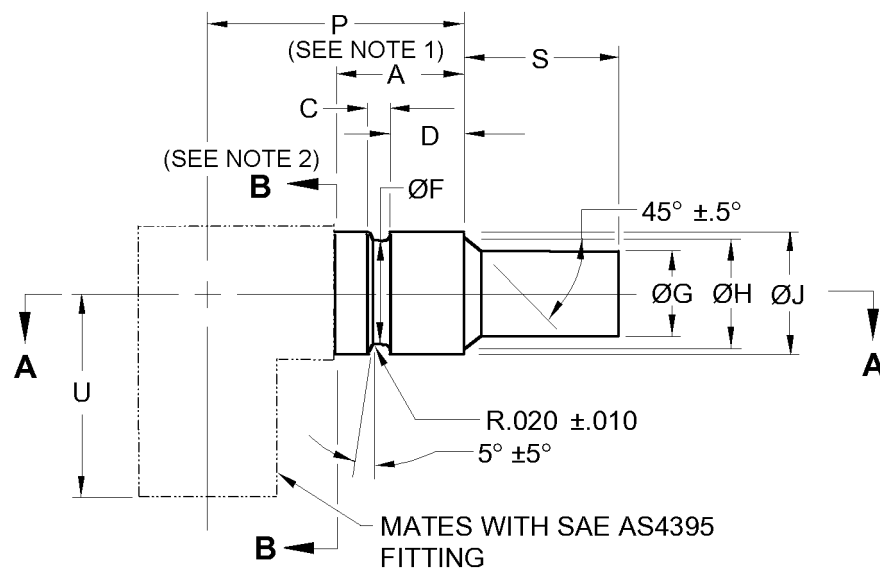
30 June 1972

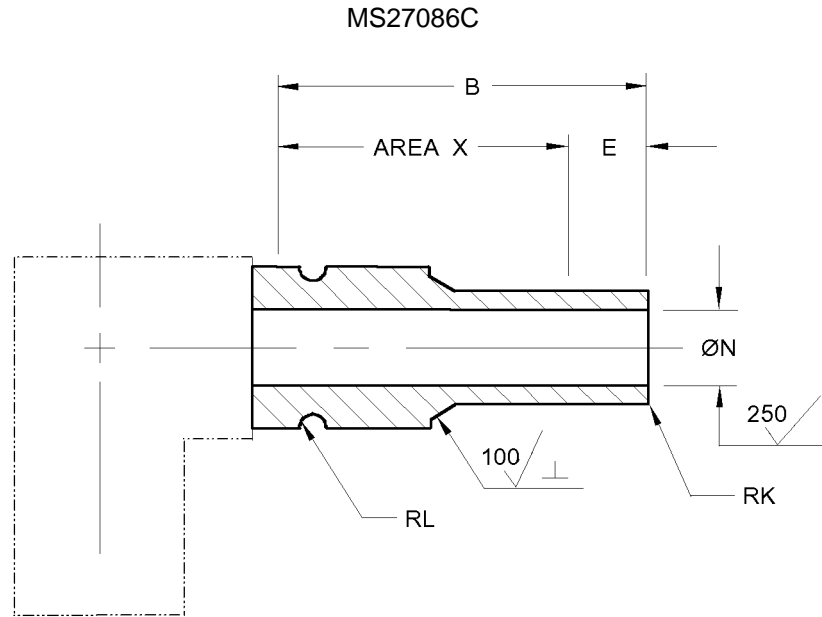
## DETAIL SPECIFICATION SHEET

## ELBOW, NIPPLE END, FLARED, TUBE TO HOSE - 90° SWIVEL NUT

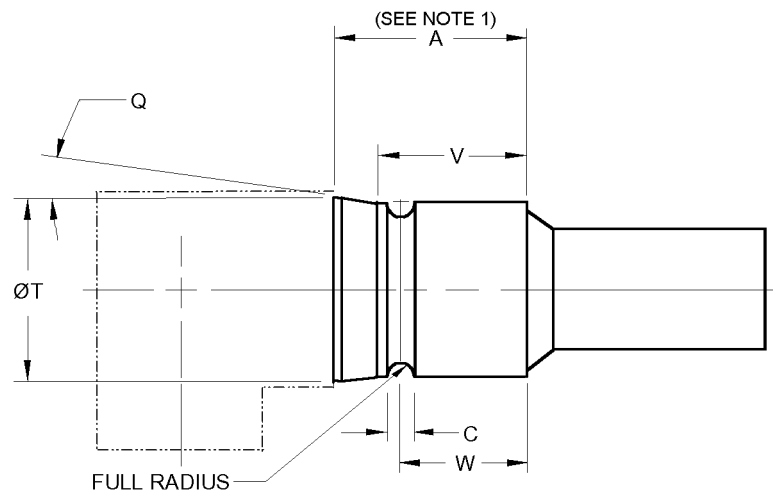
This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein  
shall consist of this specification and MIL-DTL-27272.

FIGURE 1. Elbow illustration.



SECTION A-A



-10 THRU -24 SIZE ONLY

## NOTES:

1. Use the A dimension when the adjacent diameter to the left of plane B-B is greater than the J dimension. When the adjacent diameter is equal to or less than the J dimension, the M dimension may be used in place of the A dimension.
2. Any design of the elbow to the left of plane B-B is acceptable, provided the dimensions P and U and the requirements of this specification sheet and the procurement specification are met. Any forged design is acceptable for -3/-4 through -8 size. Any bent tube design is acceptable for -10 through -24 size. The inside diameter (ID) of the elbow for the -10 through -24 size shall not be less than the ID of the nipple end of the adapter. Ovality shall not exceed 7.5 percent of nominal tubing outside diameter (OD).

FIGURE 1. Elbow illustration – Continued.

TABLE I. Elbow requirements.

PIN MS27086		A $\frac{1}{2}$ min	B min	C		D +.005 -.000	E		F		G +.005 -.000	H $\pm$ .005	J +.005 -.000
Steel	Alum												
-3/-4C	-	.515	.870	.106	$\pm$ .010	.307	.25	$\pm$ .05	.288	+.005 -.000 -.000	.205	.295	.373
-4C	-												
-5C	-								.316		.268	.360	.416
-6C	-	.555	.890	.116	$\pm$ .020	.322	.32	$\pm$ .12	.391		.330	.425	.491
-8C	-8D	.630							.497		.426	.530	.616
-10C	-10D	.654	1.030	.098	+.004 -.000	-	.35	$\pm$ .15	.586		.526	.625	.706
-12C	-12D	.755	1.240	.128	+.005 -.000	-			.674		.650	.760	.826
-16C	-16D	.831	1.340			-	.39	$\pm$ .19	1.001	+.008 -.000	.900	1.040	1.150
-20C	-20D	.881	1.570			-	.48	$\pm$ .28	1.255	+.005	1.151	1.275	1.405
-24C	-24D	1.035	1.720			-	.50	$\pm$ .30	1.490	-.000	1.401	1.550	1.635

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PIN MS27086		K		L ±.004	M <sup>1</sup> / <sub>2</sub> min	N			P		Q max	S					
Steel	Alum					Steel	Alum										
-3/-4C	-	.015	+.005 -.000	.036	.485	.161	-	+.005 -.000	.845	±.020	-	.480	±.010				
-4C	-						-										
-5C	-						.040				.501			.224	-	.900	-
-6C	-																.521
-8C	-8D	.020		.047	.583	.345	.345	+.006 -.000	1.235	±.035	-	.600					
-10C	-10D			±.005	-	.620	.440		.440		1.315	-	.650	±.015			
-12C	-12D	-	.720		.560	.560	1.808	15.5°	.675	±.025							
-16C	-16D	.030	-		.796	.828	.828	1.901	1.5°		.730						
-20C	-20D		-		.846	1.058	1.058	2.180	15.5°		.935						
-24C	-24D	.035		-	1.000	1.253	1.282	+.005 -.000	2.500			.980					

See note at end of table.

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TABLE I. Elbow requirements - Continued.

PIN MS27086		T max	U		V		W +.005 – .000	
Steel	Alum						Steel	Alum
-3/-4C	-	-	.530	±.020	-	-	-	-
-4C	-	-	.580		-	-	-	-
-5C	-	-	.653		-	-	-	-
-6C	-	-	.720		-	-	-	-
-8C	-8D	-	.830		-	-	-	-
-10C	-10D	-	1.126	±.035	-	-	.420	.427
-12C	-12D	.900	1.376		.625	±.010	.500	.500
-16C	-16D	1.190	1.500		.670		.545	.545
-20C	-20D	1.485	1.782		.695		.565	.571
-24C	-24D	1.750	2.032		.795		.665	.665

1/ Use the A dimension when the adjacent diameter to the left of plane B-B is greater than the J dimension. When the adjacent diameter is equal to or less than the J dimension, the M dimension may be used in place of the A dimension.

## REQUIREMENTS

Intended use. This part is a component of elbow subassemblies MS27068 for sizes -3/-4 through -8, and MS27065 for sizes -10 through -24. This is a design standard for manufacturing purposes. The item is only procured as an integral part of adapter assemblies.

Identification of product. The Part of Identifying Number (PIN) for this part shall be as specified in table I (e.g., MS27086-4C).

Dimensions and tolerances. Dimensions are in inches. Unless otherwise specified, break or radius all corners .005, +.005, -.000. All diameters within length A plus S must be concentric within .005 full indicator movement.

Material. PIN suffix C, corrosion-resistant steel, class 304 or 321, cold finish condition A, in accordance with SAE AMS-QQ-S-763.

PIN suffix D. Aluminum alloy, 6061-T6 or T651, in accordance with SAE AMS-QQ-A-367 or SAE AMS-QQ-A-225/8.

Finish. Corrosion-resistant steel, passivate in accordance with SAE AMS-QQ-P-35. Dry-film lubricate area X with lubricant conforming to SAE AS1701. No overspray allowed.

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

Elbow illustration. See figure 1.

Remove all burrs and slivers.

Surface roughness. Unless otherwise specified, maximum surface roughness shall not exceed 125  $\mu$ in.  $R_a$  in accordance with ASME B46.1.

Order of precedence. This specification takes precedence over the documents referenced herein. Unless otherwise specified, referenced documents shall be of the issue in effect on the date of solicitation.

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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.

### CONCLUDING MATERIAL

#### Custodians:

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

#### Preparing activity:

DLA - CC

(Project 4730-0868-059)

#### Review activities:

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