

**REV.  
B**

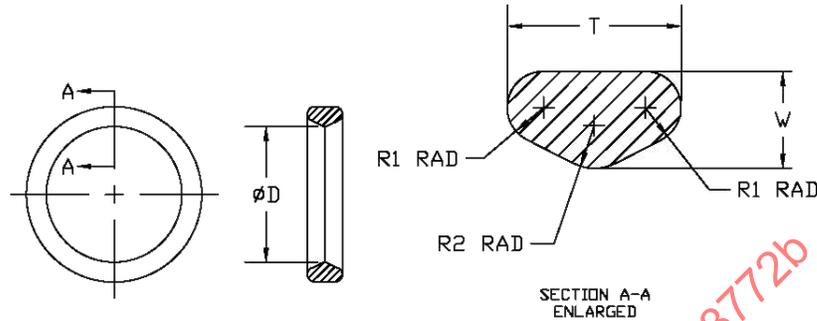
RATIONALE

THIS FIVE YEAR REVIEW UPDATES THE INSPECTION CRITERIA AND INCLUDES EDITORIAL CORRECTIONS.

FOREWORD

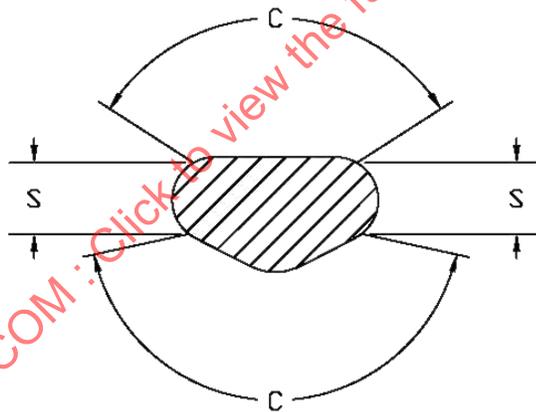
THIS STANDARD ESTABLISHES THE DIMENSIONAL AND VISUAL QUALITY REQUIREMENTS, LOT REQUIREMENTS AND PACKAGING AND LABELING REQUIREMENTS FOR D-RINGS MOLDED FROM MIL-P-25732 RUBBER. IT SHALL BE USED FOR PROCUREMENT PURPOSES.

**AS28772**



NOTE: DIMENSIONS AND TOLERANCING PER ASME Y14.5-2009

**FIGURE 1 - D-RING**

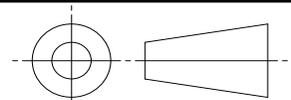


KEY:  
C = CRITICAL SURFACES  
S = SECONDARY SURFACES  
(APPROXIMATE LOCATIONS SHOWN)

**FIGURE 2 - SURFACES**

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THIRD ANGLE PROJECTION



CUSTODIAN: A-6/A-6C2



**AEROSPACE STANDARD**

(R) "D" RING SEAL FOR SHOCK STRUTS MOLDED FROM AMS-P-25732 MATERIAL

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SHEET 1 OF 4

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**TABLE 1 - PART NUMBERS AND DIMENSIONS**

PART NUMBER	ID		T		R RAD		S RAD		W		APPROX MASS			
	INCH	(MM)	INCH ±.005	(MM) ±0.127	INCH ±.010	(MM) ±0.254	INCH ±.010	(MM) ±0.254	INCH ±.005	(MM) ±0.127	LB/100	KG/100		
MS28772-335	2.725	69.215									1.670	0.757		
MS28772-336	2.850	72.390									1.741	0.790		
MS28772-337	2.975	75.565									1.812	0.822		
MS28772-338	3.100	78.740									1.883	0.855		
MS28772-339	3.225	81.915									1.954	0.887		
MS28772-340	3.350	85.090									2.025	0.918		
MS28772-341	3.475	88.265									2.097	0.951		
MS28772-342	3.600	91.440	±0.015	±0.381	.375	9.525	.093	2.362	.078	1.981	.210	5.334	2.167	0.983
MS28772-343	3.725	94.615											2.239	1.016
MS28772-344	3.850	97.790											2.310	1.048
MS28772-345	3.975	100.965											2.381	1.080
MS28772-346	4.100	104.140											2.452	1.112
MS28772-347	4.225	107.315											2.523	1.145
MS28772-348	4.350	110.490											2.594	1.176
MS28772-349	4.475	113.665											2.665	1.209

PART NUMBER	ID		T		R RAD		S RAD		W		APPROX MASS			
	INCH	(MM)	INCH ±.005	(MM) ±0.127	INCH ±.010	(MM) ±0.254	INCH ±.010	(MM) ±0.254	INCH ±.006	(MM) ±0.152	LB/100	KG/100		
MS28772-425	4.475	113.665									4.634	2.102		
MS28772-426	4.600	116.840									4.757	2.157		
MS28772-427	4.725	120.015	±0.015	±0.381	.531	13.487	.125	3.175	.105	2.667	.275	6.985	4.878	2.213
MS28772-428	4.850	123.190											5.000	2.268
MS28772-429	4.975	126.365											5.122	2.323
MS28772-430	5.100	129.540											5.244	2.379
MS28772-431	5.225	132.715											5.366	2.433
MS28772-432	5.350	135.890											5.488	2.489
MS28772-433	5.475	139.065											5.609	2.545
MS28772-434	5.600	142.240											5.731	2.599
MS28772-435	5.725	145.415											5.853	2.655
MS28772-436	5.850	148.590	±0.023	±0.584	.531	13.487	.125	3.175	.105	2.667	.275	6.985	5.975	2.722
MS28772-437	5.975	151.765											6.097	2.765
MS28772-438	6.225	158.115											6.341	2.877
MS28772-439	6.475	164.465											6.585	2.987
MS28772-440	6.725	170.815											6.829	3.097
MS28772-441	6.975	177.165											7.073	3.209
MS28772-442	7.225	183.515											7.317	3.319
MS28772-443	7.475	189.865											7.561	3.429
MS28772-444	7.725	196.215											7.805	3.540
MS28772-445	7.975	201.295											8.048	3.651
MS28772-446	8.475	215.265											8.536	3.872
MS28772-447	8.975	227.965											9.025	4.094
MS28772-448	9.475	240.665											9.512	4.315
MS28772-449	9.975	253.365											10.000	4.536
MS28772-450	10.475	266.065											10.487	4.757
MS28772-451	10.975	278.765	±0.030	±0.762	.531	13.487	.125	3.175	.105	2.667	.275	6.985	10.975	4.978
MS28772-452	11.475	291.465											11.464	5.200
MS28772-453	11.975	304.165											11.951	5.422
MS28772-454	12.475	316.865											12.439	5.642
MS28772-455	12.975	329.565											12.927	5.864
MS28772-456	13.475	342.265											13.414	6.084
MS28772-457	13.975	354.965											13.902	6.306
MS28772-458	14.475	367.665											14.389	6.526
MS28772-459	14.975	380.365											14.878	6.743
MS28772-460	15.475	393.065											15.366	6.970

APPLICATION:

THESE D-RINGS TYPICALLY ARE USED AS ROD SEALS IN SHOCK STRUTS. THEY SHOULD NOT BE USED IN CONJUNCTION WITH ANY HYDRAULIC FLUID OTHER THAN THAT CONFORMING TO MIL-PRF-5606. THESE D-RINGS HAVE A SERVICE TEMPERATURE RANGE OF -65 TO +160 °F (-54 TO +71 °C).

	<b>AEROSPACE STANDARD</b>		<b>AS28772</b> SHEET 2 OF 4	<b>REV.</b> <b>B</b>
	(R) "D" RING SEAL FOR SHOCK STRUTS MOLDED FROM AMS-P-25732 MATERIAL			

APPLICABLE REFERENCES:

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](http://www.sae.org).

- AMS2817 PACKAGING AND IDENTIFICATION, PREFORMED PACKINGS
- ARP5316 STORAGE OF ELASTOMER SEALS AND SEAL ASSEMBLIES WHICH INCLUDE AN ELASTOMER ELEMENT PRIOR TO HARDWARE ASSEMBLY
- AS4716 GLAND DESIGN, O-RING AND OTHER ELASTOMERIC SEALS

U.S. GOVERNMENT PUBLICATIONS

COPIES OF THESE DOCUMENTS ARE AVAILABLE ONLINE AT <http://quicksearch.dla.mil>.

- MIL-G-5514 GLAND DESIGN, PACKINGS, HYDRAULIC, GENERAL REQUIREMENTS FOR (INACTIVE FOR NEW DESIGNS)
- MIL-P-25732 PACKING, PREFORMED, PETROLEUM FLUID RESISTANT, LIMITED SERVICE AT 275 DEG. F (135 DEG. C)
- MIL-PRF-5606 HYDRAULIC FLUID, PETROLEUM BASE; AIRCRAFT, MISSILE, AND ORDNANCE.

ASQ PUBLICATIONS

AVAILABLE FROM AMERICAN SOCIETY FOR QUALITY, 600 NORTH PLANKINTON AVENUE, MILWAUKEE, WI 53203, TEL: 800-248-1946 (UNITED STATES OR CANADA), 001-800-514-1564 (MEXICO) OR +1-414-272-8575 (ALL OTHER LOCATIONS), [www.asq.org](http://www.asq.org).

- ANSI/ASQ Z1.4 SAMPLING PROCEDURES AND TABLES FOR INSPECTION BY ATTRIBUTES

ASME AND ISO PUBLICATIONS

AVAILABLE FROM AMERICAN NATIONAL STANDARDS INSTITUTE, 25 WEST 43RD STREET, 4TH FLOOR, NEW YORK, NY 10036, TEL: 212-642-4900, [www.ansi.org](http://www.ansi.org).

- ASME Y14.5-2009 DIMENSIONING AND TOLERANCING
- ISO 3601-1 FLUID POWER SYSTEMS – O-RINGS – PART 1: INSIDE DIAMETERS, CROSS-SECTIONS, TOLERANCES AND DESIGNATION CODES
- ISO 3601-3 FLUID POWER SYSTEMS – O-RINGS – PART 3: QUALITY ACCEPTANCE CRITERIA

REQUIREMENTS:

1. MATERIAL: THE MATERIAL SHALL BE IN ACCORDANCE WITH MIL-P-25732.
2. DIMENSIONAL AND VISUAL INSPECTION: PRIOR TO INSPECTION, MOLD FLASH SHALL BE REMOVED FROM THE D-RINGS IN SUCH A MANNER THAT THEY CONFORM TO THE REQUIREMENTS SPECIFIED HEREIN. FOR END OF PROCESS INSPECTION, EACH INDIVIDUAL O-RING (100%) SHALL BE VISUALLY INSPECTED AT 1X MAGNIFICATION FOR MOLD FLASH, BACKRIND, PARTING LINE PROJECTION, NON-FILLS, FLOW LINES AND OTHER SIGNIFICANT DEFECTS. THE ENTIRE D-RING SURFACE SHALL BE INSPECTED.
3. FOR FINAL INSPECTION, THE SAMPLE SIZE SHALL BE IN ACCORDANCE WITH ANSI/ASQ Z1.4 SINGLE SAMPLING PLAN INSPECTION LEVEL II WITH AN AQL 1.0 EXCEPT THAT THE ACCEPTANCE NUMBER SHALL BE ZERO.

THE SAMPLE UNIT SHALL BE ONE D-RING. INSPECTION FOR CRITICAL SURFACES (C) PER FIGURE 2 SHALL BE ACCORDING TO ISO 3601-3, GRADE S REQUIREMENTS AND INSPECTION FOR SECONDARY SURFACES (S) PER FIGURE 2 SHALL BE IN ACCORDANCE TO ISO 3601-3 GRADE N UNDER 2X MAGNIFICATION. IN CASE OF DISAGREEMENT, THE VISUAL INSPECTION AT 2X MAGNIFICATION SHALL GOVERN. THE ENTIRE D-RING SURFACE SHALL BE MANUALLY INSPECTED. THE PROCEDURES OUTLINED IN ANNEX B OF ISO 3601-1 SHALL BE FOLLOWED FOR DIMENSIONAL INSPECTION. IF THE PURCHASER REQUIRES A DIFFERENT SAMPLING PLAN OR VISUAL INSPECTION CRITERIA, MANUFACTURER SHALL BE INFORMED PRIOR TO TIME OF ORDER.

NOTE: INSPECTION CRITERIA SHOULD BE PER THE REQUIREMENTS OF >.248 INCH (>6.300 MM) CROSS SECTION.

	<b>AEROSPACE STANDARD</b>	<b>AS28772</b> SHEET 3 OF 4	<b>REV.</b> <b>B</b>
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