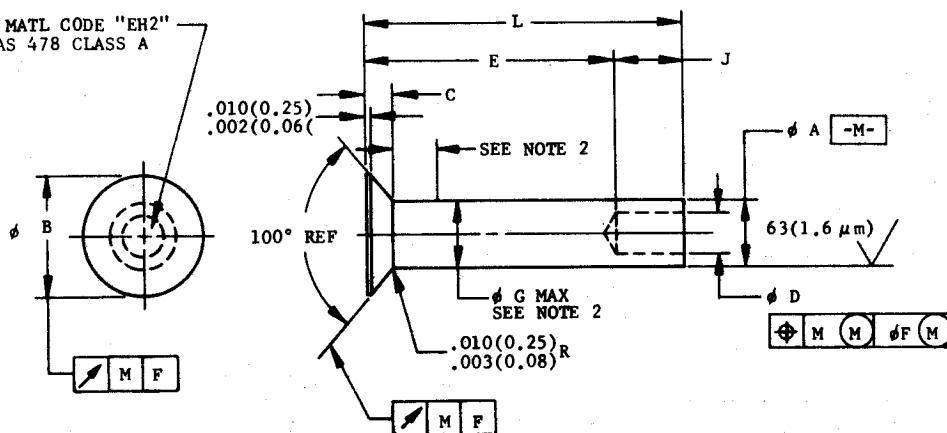


AS3230

SHEET 1 OF 4

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

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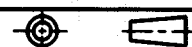


NOMINAL DIAMETER		A		B		C		D	
IN.	(mm)	IN.	(mm)	IN.	(mm)	IN.	(mm)	IN.	(mm)
.062	1.57	.061-.063	1.55-1.60	.099-.107	2.52- 2.71	.019-.023	0.49-0.58	.021-.026	0.54-0.66
.094	2.39	.093-.095	2.37-2.41	.164-.172	4.17- 4.36	.033-.037	0.84-0.93	.045-.050	1.15-1.27
.125	3.18	.123-.126	3.13-3.20	.210-.218	5.34- 5.53	.039-.043	1.00-1.09	.060-.065	1.53-1.65
.156	3.96	.154-.157	3.92-3.98	.272-.280	6.91- 7.11	.052-.056	1.33-1.42	.092-.097	2.34-2.46
.188	4.78	.186-.189	4.73-4.80	.337-.347	8.56- 8.81	.067-.071	1.71-1.80	.107-.112	2.72-2.84
.250	6.35	.248-.252	6.30-6.40	.460-.470	11.69-11.93	.092-.096	2.34-2.43	.154-.159	3.92-4.03

NOMINAL DIAMETER		F		G MAX		J (REF)	
IN.	(mm)	IN.	(mm)	IN.	(mm)	IN.	(mm)
.062	1.57	.010	0.25	.064	1.62	.090	2.29
.094	2.39	.010	0.25	.096	2.43	.105	2.67
.125	3.18	.010	0.25	.128	3.25	.130	3.30
.156	3.96	.015	0.38	.158	4.01	.155	3.94
.188	4.78	.015	0.38	.191	4.85	.180	4.57
.250	6.35	.020	0.50	.254	6.45	.230	5.84

1. MATERIAL: CRES AMS 7232
2. ϕ G FOR DISTANCE OF .060(1.52) FOR LENGTHS .188(4.78) AND SHORTER AND .100(2.54) FOR LENGTHS LONGER THAN .188(4.78).
3. SURFACE TEXTURE: SYMBOLS PER ANSI Y14.36-1978; REQUIREMENTS PER ANSI B46.1-1978. UNLESS OTHERWISE SPECIFIED, SURFACES TO BE 250 MICROINCHES (6.3 MICROMETRES).
4. DIMENSIONS AND TOLERANCES: ANSI Y14.5-1973.
5. DIMENSIONS IN INCHES (MILLIMETRES), METRIC CONVERSIONS IN PARENTHESES ARE IN INTERNATIONAL SYSTEMS UNITS (SI).
6. BREAK SHARP EDGES .003-.015(0.08-0.38) UNLESS OTHERWISE SPECIFIED.
7. DO NOT USE UNASSIGNED PART NUMBERS.

THIRD ANGLE PROJECTION



PREPARED BY SAE COMMITTEE E-25, ENGINE AND PROPELLER STANDARD UTILITY PARTS

Society of Automotive Engineers, Inc.

400 COMMONWEALTH DRIVE, WARRENDALE, PA 15095

AEROSPACE STANDARD

RIVET - TUBULAR, COUNTERSUNK, AMS 7232

AS3230

SHEET 1 OF 4

REAFFIRMED

11/61 5/95

A = .094 (2.39)

A = .062 (1.57)

L

PREPARED BY SAE COMMITTEE E-25, ENGINE AND PROPELLER STANDARD UTILITY PARTS

Society of Automotive Engineers, Inc.

RIVET - TUBULAR, COUNTERSUNK, AMS 7232

AEROSPACE STANDARD

AS3230

SHEET 2 OF 4

Issued

Revised

L		PART NO.		E		PART NO.	E		APPROX MASS		APPROX MASS	
IN.	(mm)			IN.	(mm)		IN.	(mm)	LB/100	kg/100	LB/100	kg/100
146-166	3.71-4.21	AS3230-001	.051-.081	.083-.103	1.30-2.05	.014	.036-.066	0.92-1.67	.033	.015	.033	.015
178-198	4.53-5.02	AS3230-002	.083-.103	.114-.144	2.11-3.30	.017	.068-.098	2.52-3.27	.039	.017	.039	.017
209-229	5.31-5.81	AS3230-003	.114-.144	.145-.175	2.90-3.65	.019	.099-.129	3.31-4.06	.046	.021	.046	.021
240-260	6.10-6.60	AS3230-004	.145-.175	.176-.206	3.69-4.44	.023	.130-.160	4.09-4.85	.052	.024	.052	.024
271-291	6.89-7.39	AS3230-005	.176-.206	.207-.237	4.48-5.23	.026	.161-.191	4.88-5.63	.059	.027	.059	.027
302-322	7.68-8.17	AS3230-006	.207-.237	.239-.269	5.26-6.01	.028	.192-.222	5.69-6.45	.066	.030	.066	.030
334-354	8.49-8.99	AS3230-007	.239-.269	.270-.300	6.08-6.83	.032	.224-.254	6.48-7.23	.073	.033	.073	.033
365-385	9.28-9.77	AS3230-008	.270-.300	.301-.331	7.65-8.40	.034	.255-.285	8.07-8.82	.079	.036	.079	.036
396-416	10.06-10.56	AS3230-009	.301-.331	.332-.362	8.46-9.22	.037	.286-.316	9.66-10.41	.085	.039	.085	.039
428-448	10.88-11.37	AS3230-010	.332-.362	.363-.393	9.25-10.00	.039	.318-.348	10.44-11.20	.092	.042	.092	.042
459-479	11.66-12.16	AS3230-011	.363-.393	.394-.424	10.04-10.79	.043	.349-.379	11.23-11.98	.099	.045	.099	.045
490-510	12.45-12.95	AS3230-012	.394-.424	.425-.455	11.61-12.36	.046	.380-.410	12.04-12.80	.106	.048	.106	.048
521-541	13.24-13.74	AS3230-013	.425-.455	.456-.486	12.43-13.18	.049	.411-.441	13.62-14.37	.112	.051	.112	.051
552-572	14.03-14.52	AS3230-014	.456-.486	.487-.517	13.22-13.97	.051	.442-.472	14.43-15.18	.117	.053	.117	.053
584-604	14.84-15.34	AS3230-015	.487-.517	.518-.548	14.01-14.76	.054	.473-.503	15.22-15.97	.125	.057	.125	.057
615-635	15.63-16.12		.549-.579	.580-.610	14.83-15.58	.057	.504-.534	16.01-16.76	.131	.060	.131	.060
645-665	16.39-16.89		.580-.610	.611-.641	15.64-16.39	.059	.535-.565	17.58-18.33	.138	.062	.138	.062
678-698	17.23-17.72		.642-.672	.673-.703	16.45-17.20	.062	.566-.596	18.39-19.15	.145	.066	.145	.066
709-729	18.01-18.51		.704-.734	.735-.765	17.26-18.01	.065	.597-.627	19.18-19.93	.151	.068	.151	.068
740-760	18.80-19.30		.766-.796	.797-.827	18.07-18.82	.068	.628-.658	20.78-21.53	.158	.072	.158	.072
771-791	19.59-20.09		.828-.858	.859-.889	18.88-19.63	.071	.659-.689	21.57-22.32	.164	.074	.164	.074
802-822	20.38-20.87		.880-.910	.911-.941	19.69-20.44	.074	.690-.720	22.36-23.11	.171	.077	.171	.077
834-854	21.19-21.69		.942-.972	.973-1.003	20.50-21.25	.077	.721-.751	23.13-23.88	.178	.081	.178	.081
865-885	21.98-22.47		.974-1.004	1.005-1.035	21.31-22.06	.080	.752-.782	24.13-24.88	.184	.084	.184	.084
896-916	22.76-23.26		1.006-1.036	1.037-1.067	22.12-22.87	.083	.783-.813	25.13-25.88	.191	.087	.191	.087
928-948	23.58-24.07		1.038-1.068	1.069-1.099	22.93-23.68	.086	.814-.844	26.13-26.88	.197	.089	.197	.089
959-979	24.36-24.86		1.069-1.099	1.100-1.130	23.74-24.49	.089	.845-.875	27.13-27.88	.204	.092	.204	.092
990-1010	25.15-25.65		1.101-1.131	1.132-1.162	24.55-25.30	.092	.876-.906	28.13-28.88	.210	.095	.210	.095
1032-1072	26.73-27.22		1.133-1.163	1.164-1.194	25.36-26.11	.095	.907-.937	29.13-29.88	.217	.098	.217	.098
1115-1135	28.33-28.82		1.165-1.195	1.196-1.226	26.17-26.92	.098	.938-.968	30.13-30.88	.224	.102	.224	.102
1176-1198	29.93-30.42		1.197-1.227	1.228-1.258	26.98-27.73	.101	.969-.999	31.13-31.88	.231	.107	.231	.107
1240-1260	31.50-32.00		1.229-1.259	1.260-1.290	27.79-28.54	.104	.1000-1.030	32.13-32.88	.237	.113	.237	.113
1302-1322	33.08-33.57		1.261-1.291	1.292-1.322	28.60-29.35	.107	.1031-1.061	33.13-33.88	.250	.119	.250	.119
1365-1385	34.68-35.17		1.293-1.323	1.324-1.354	29.41-30.16	.110	.1062-1.092	34.13-34.88	.263	.125	.263	.125
1428-1448	36.28-36.77		1.325-1.355	1.356-1.386	30.22-30.97	.113	.1093-1.123	35.13-35.88	.276	.131	.276	.131
1490-1510	37.85-38.35		1.387-1.417	1.418-1.448	31.03-31.78	.116	.1124-1.154	36.13-36.88	.289	.137	.289	.137
			1.449-1.479	1.480-1.510	31.84-32.59	.119	.1155-1.185	37.13-37.88	.303	.143	.303	.143
			1.511-1.541	1.542-1.572	32.65-33.40	.122	.1186-1.216	38.13-38.88	.316	.149	.316	.149

AS3230

SHEET 3 OF 4

A=1.25 (3.18)										A=1.56 (3.96)									
L			E			PART NO.	APPROX MASS			E			APPROX MASS						
IN.	(mm)		IN.	(mm)			LB/100	kg/100		IN.	(mm)		LB/100	kg/100					
.178-.198	4.53-5.02	AS3230-102	.043-.073	1.10-1.85	.070	AS3230-154	.080-.110	2.04-2.79	.146	.066									
.209-.229	5.31-5.81	AS3230-103	.074-.104	1.88-2.64	.081	AS3230-155	.111-.141	2.82-3.58	.163	.074									
.240-.260	6.10-6.60	AS3230-104	.105-.135	2.67-3.42	.093	AS3230-156	.142-.172	3.61-4.36	.181	.082									
.271-.291	6.89-7.39	AS3230-105	.136-.166	3.46-4.21	.105	AS3230-157	.174-.204	4.42-5.18	.200	.091									
.302-.322	7.68-8.17	AS3230-106	.167-.197	4.25-5.00	.116	AS3230-158	.205-.235	5.21-5.96	.219	.099									
.334-.354	8.49-8.99	AS3230-107	.199-.229	5.06-5.81	.128	AS3230-159	.236-.266	6.00-6.75	.237	.107									
.365-.385	9.28-9.77	AS3230-108	.230-.260	5.85-6.60	.140	AS3230-160	.268-.298	6.81-7.56	.255	.116									
.396-.416	10.08-10.56	AS3230-109	.261-.291	6.63-7.39	.151	AS3230-161	.299-.329	7.60-8.35	.273	.124									
.428-.448	10.88-11.37	AS3230-110	.293-.323	7.45-8.20	.163	AS3230-162	.330-.360	8.39-9.14	.291	.132									
.459-.479	11.66-12.16	AS3230-111	.324-.354	8.23-8.99	.175	AS3230-163	.361-.391	9.17-9.93	.309	.140									
.490-.510	12.45-12.95	AS3230-112	.355-.385	9.02-9.77	.186	AS3230-164	.392-.422	9.96-10.71	.327	.148									
.521-.541	13.24-13.74	AS3230-113	.386-.416	9.81-10.56	.197	AS3230-165	.424-.454	10.77-11.53	.346	.157									
.552-.572	14.03-14.52	AS3230-114	.417-.447	10.47-11.22	.209	AS3230-166	.455-.485	11.56-12.31	.364	.165									
.584-.604	14.84-15.34	AS3230-115	.449-.479	11.41-12.16	.220	AS3230-167	.486-.516	12.35-13.10	.382	.173									
.615-.635	15.63-16.12	AS3230-116	.480-.510	12.20-12.95	.232	AS3230-168	.518-.548	13.16-13.91	.401	.182									
.645-.665	16.39-16.89	AS3230-117	.511-.541	12.98-13.74	.244	AS3230-169	.549-.579	13.95-14.70	.419	.190									
.678-.698	17.23-17.72	AS3230-118	.542-.572	13.79-14.54	.256	AS3230-170	.580-.610	14.78-15.49	.437	.198									
.709-.729	18.01-18.51	AS3230-119	.574-.604	14.58-15.34	.268	AS3230-171	.611-.641	15.52-16.28	.454	.206									
.740-.760	18.80-19.30	AS3230-120	.605-.635	15.37-16.12	.279	AS3230-172	.642-.672	16.31-17.06	.472	.214									
.771-.791	19.59-20.09	AS3230-121	.636-.666	16.16-16.91	.290	AS3230-173	.673-.703	17.12-17.88	.492	.223									
.802-.822	20.38-20.87	AS3230-122	.667-.697	16.95-17.70	.302	AS3230-174	.705-.735	17.91-18.66	.510	.231									
.834-.854	21.19-21.69	AS3230-123	.699-.729	17.76-18.51	.314	AS3230-175	.736-.766	18.70-19.45	.528	.239									
.865-.885	21.98-22.47	AS3230-124	.730-.760	18.55-19.30	.325	AS3230-176	.768-.798	19.51-20.26	.546	.248									
.896-.916	22.76-23.26	AS3230-125	.761-.791	19.33-20.09	.336	AS3230-177	.799-.829	20.30-21.05	.564	.256									
.928-.948	23.58-24.07	AS3230-126	.793-.823	20.15-20.90	.349	AS3230-178	.830-.860	21.09-21.84	.582	.264									
.959-.979	24.36-24.86	AS3230-127	.824-.854	20.93-21.69	.360	AS3230-179	.892-.922	22.66-23.41	.619	.281									
.990-1.010	25.15-25.65	AS3230-128	.855-.885	21.72-22.47	.372	AS3230-180	.955-.985	24.26-25.01	.655	.297									
1.052-1.072	26.73-27.22	AS3230-129	.917-.947	23.30-24.05	.396	AS3230-181	1.018-1.048	25.86-26.61	.690	.313									
1.115-1.135	28.33-28.82	AS3230-130	.980-1.010	24.90-25.65	.419	AS3230-182	1.080-1.110	27.44-28.19	.728	.330									
1.178-1.198	29.93-30.42	AS3230-131	1.043-1.073	26.50-27.25	.443	AS3230-183	1.142-1.172	29.01-29.76	.764	.346									
1.240-1.260	31.50-32.00	AS3230-132	1.105-1.135	28.07-28.82	.465	AS3230-184	1.205-1.235	30.61-31.36	.801	.363									
1.302-1.322	33.08-33.57	AS3230-133	1.167-1.197	29.65-30.40	.488	AS3230-185	1.268-1.298	32.21-32.96	.837	.380									
1.365-1.385	34.68-35.17	AS3230-134	1.230-1.260	31.25-32.00	.512	AS3230-186	1.330-1.360	33.79-34.54	.873	.396									
1.428-1.448	36.28-36.77	AS3230-135	1.293-1.323	32.85-33.60	.535	AS3230-187	1.392-1.422	35.36-36.11	.906	.411									
1.490-1.510	37.85-38.35	AS3230-136	1.355-1.385	34.42-35.17	.558	AS3230-188	1.455-1.485	36.96-37.71	.946	.429									
1.552-1.572	39.43-39.92	AS3230-137	1.417-1.447	36.00-36.75	.581	AS3230-189	1.518-1.548	38.56-39.31	.983	.446									
1.615-1.635	41.03-41.52	AS3230-138	1.480-1.510	37.60-38.35	.605	AS3230-190	1.580-1.610	40.14-40.89	1.020	.462									
1.678-1.698	42.63-43.12	AS3230-139	1.543-1.573	39.20-39.95	.628	AS3230-191	1.642-1.672	41.71-42.46	1.055	.478									
1.740-1.760	44.20-44.70	AS3230-140	1.605-1.635	40.77-41.52	.652	AS3230-192	1.705-1.735	43.31-44.06	1.092	.495									
1.802-1.822	45.78-46.27					AS3230-193	1.768-1.798	44.91-45.66	1.128	.512									
1.865-1.885	47.38-47.87					AS3230-194	1.830-1.860	46.49-47.24	1.165	.528									
1.928-1.948	48.98-49.47																		
1.990-2.010	50.55-51.05																		

PREPARED BY SAE COMMITTEE E-25, ENGINE AND PROPELLER STANDARD UTILITY PARTS

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.

AEROSPACE STANDARD

RIVET - TUBULAR, COUNTERSUNK, AMS 7232

AS3230

SHEET 3 OF 4

PREPARED BY SAE COMMITTEE E-25, ENGINE AND PROPELLER STANDARD UTILITY PARTS

Society of Automotive Engineers, Inc.

AEROSPACE STANDARD

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SHEET 3 OF 4

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