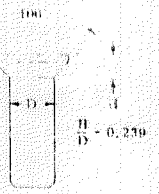

Sheet Material		2024-T3 Clad Sheet Machine Countersunk		
Rivet Diameter		Strength in Lbs		
		1/8	5/32	3/16
Machine Countersunk Sheet Thickness (b)	0.025	209		
	0.032	267		
	0.040	292	356	475
	0.050	313	475	600
	0.063	330	506	662
	0.071	337	516	732
	0.080	342	528	757
	0.090	368	541	775
	0.100		548	787
	0.125		596	862

(a) All test specimens were single shear, single rivet lap joints. Reference Grumman Report GE-148.

(b) In cases where the lower sheet is thinner than the upper sheet, the shear-bearing allowable for the lower sheet-rivet combination should be computed.

SHEAR ALLOWABLE ULTIMATE STATIC LOADS FOR NAS1097-AD RIVETS MACHINE-COUNTERSUNK IN 2024-T3 CLAD SHEET (a)

(EDGE DISTANCE = 2D)

2.1.7

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STRUCTURAL DESIGN DATA

The information in this Pocket Manual has been obtained primarily from the Grumman Structures Manual, and MIL-HDBK-5, dated June 1965.

GRUMMAN
AIRCRAFT
ENGINEERING
CORPORATION
Bethpage, New York

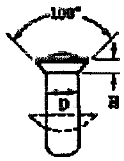
J. Kelleher

4/65

ALLOWABLE ULTIMATE STATIC SHEAR STRENGTH FOR COUNTERSUNK-HEAD NAS1097-DD5 & -DD6 RIVETS IN 7075 CLAD SHEET[a]

$\frac{e}{D} = 2.0$ $\frac{W}{D} = 6.0$

Strength in Lbs [b], [c]			
Rivet Diameter		5/32	3/16
Sheet Thickness	0.032	395	
	0.036	495	
	0.040	550	620
	0.045	590	755
	0.050	620	825
	0.056	640	870
	0.063	655	910
	0.071	675	940
	0.080	685	960
	0.090	695	980
	0.100	700	995
	0.125	730	1,010
	0.160	765	1,050
	0.190	815	1,095
	0.250		1,180



$\frac{H}{D} \sim 0.242$

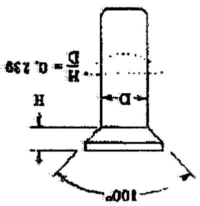
(a) All test specimens were single shear, single rivet lap joints. Reference Grumman Report GE-146.

(b) In cases where the lower sheet is thinner than the upper sheet, the shear bearing allowable for the lower sheet-rivet combination should be computed.

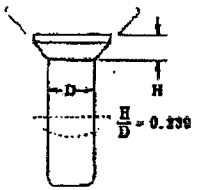
(c) Yield strength is not critical (1.304 x yield load exceeds design ultimate load for all cases listed).

TENSION ALLOWABLE ULTIMATE STATIC LOADS FOR NAS1097-AD RIVETS COUNTERSUNK IN 2024-T3 CLAD SHEET

Rivet Diameter		Strength in Lbs		
		1/8	5/32	3/16
Machine Countersunk Sheet Thickness	0.025	120		
	0.032	157	189	
	0.040	198	264	338
	0.050	253	311	387
	0.063	265	376	533
	0.071		417	602
	0.080		472	645



$\frac{H}{D} = 0.239$



Sheet Material		2024-T3 Clad Sheet Machine Countersunk		
Rivet Diameter		Strength in Lbs		
		1/8	5/32	3/16
Machine Countersunk Sheet Thickness (b)	0.025	309		
	0.032	367		
	0.040	392	356	475
	0.050	313	475	600
	0.063	330	506	662
	0.071	337	516	732
	0.080	342	528	757
	0.090	338	541	775
	0.100		548	787
	0.125		596	882

(a) All test specimens were single shear, single rivet lap joints. Reference Grumman Report GE-148.

(b) In cases where the lower sheet is thinner than the upper sheet, the shear-bearing allowable for the lower sheet-rivet combination should be computed.

SHEAR ALLOWABLE ULTIMATE STATIC LOADS FOR NAS1097-AD RIVETS MACHINE-COUNTERSUNK IN 2024-T3 CLAD SHEET (a)

(EDGE DISTANCE = 2D)

2.1.7

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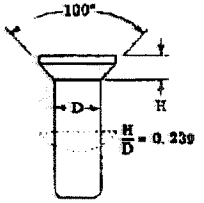

Rivet Diameter		Strength in Lbs		
		1/8	5/32	3/16
Machine Countersunk Sheet Thickness	0.025	120		
	0.032	157	189	
	0.040	198	254	338
	0.050	253	311	387
	0.063	285	376	533
	0.071		417	582
	0.080		472	645

TENSION ALLOWABLE ULTIMATE STATIC LOADS FOR NAS1097-AD RIVETS COUNTERSUNK IN 2024-T3 CLAD SHEET

2.1.9

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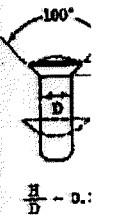
$\frac{e}{D} = 2.0$ $\frac{W}{D} = 6.0$

Strength in Lbs (b), (c)			
Rivet Diameter		5/32	3/16
Sheet Thickness	0.032	395	
	0.036	495	
	0.040	550	820
	0.045	590	755
	0.050	630	825
	0.056	640	870
	0.063	655	910
	0.071	675	940
	0.080	685	960
	0.090	695	980
	0.100	700	995
	0.125	720	1,010
	0.160	765	1,060
	0.180	815	1,095
	0.250		1,180



(a) All test specimens were single shear, single rivet lap joints. Reference Grumman Report GE-148.

(b) In cases where the lower sheet is thinner than the upper sheet, the shear bearing allowable for the lower sheet-rivet combination should be computed.

(c) Yield strength is not critical (1.304 x yield load exceeds design ultimate load for all cases listed).