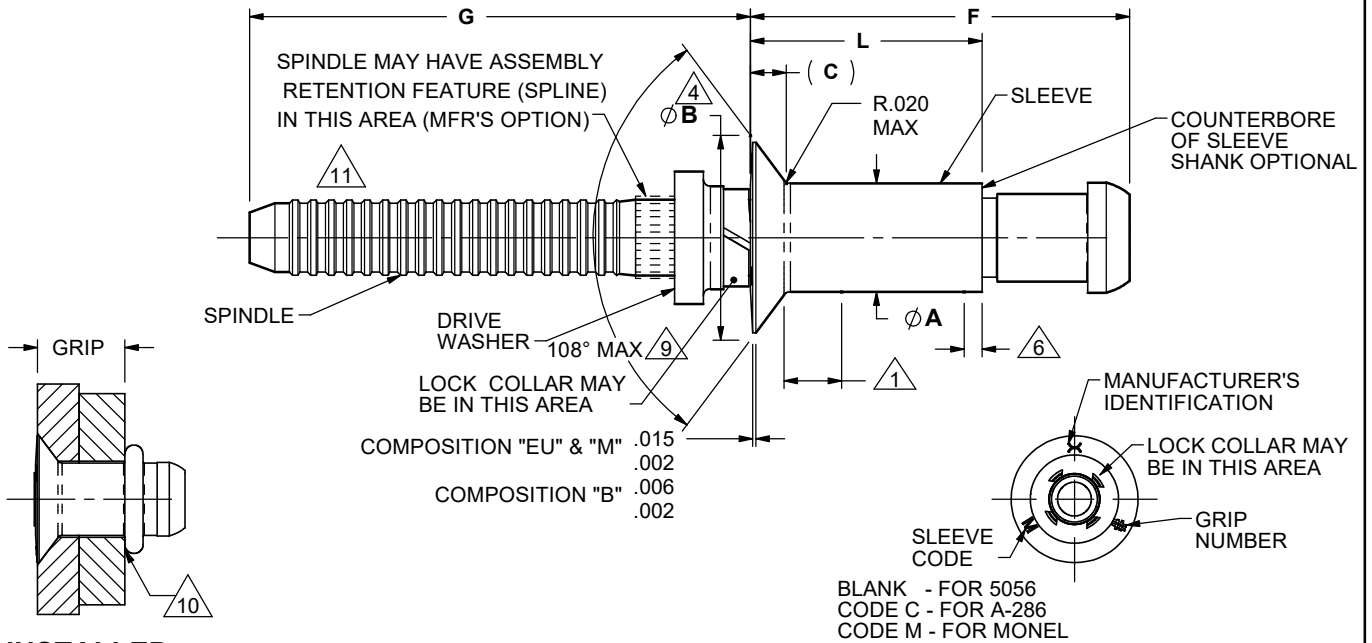




Howmet Fastening Systems
 Tucson Operations
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 Phone (520) 519-7400
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Unimatic®
 Blind Rivet
**ENGINEERING
 STANDARD**



INSTALLED FASTENER

TABLE I

PART NUMBER	DIA. SIZE	RIVET SIZE NOM	Ø A +.003 -.001	Ø B ±.004	(C)	G MIN.	SHEAR			TENSILE		HOLE LIMITS
							ALUM.	MONEL	A-286 CRES	ALUM.	MONEL & A-286 CRES	
SMLS100-()04	04	.125	.125	.225	.042	.788	495	1020	1090	325	675	.132 .129
SMLS100-()05	05	.156	.156	.286	.055	.788	755	1565	1670	490	1050	.164 .160
SMLS100-()06	06	.190	.187	.353	.070	.788	1090	2260	2400	715	1500	.196 .192
SMLS100-()08	08	.250	.250	.476	.095	1.000	1970	4000	4250	1200	2600	.261 .256

NOTES:

- 1. .001 SHANK DIAMETER INCREASE PERMISSIBLE WITHIN .100 FROM BASE OF HEAD.
- 2. MARKING OF ALUMINUM RIVETS MAY BE ON SPINDLE AT MANUFACTURER'S OPTION.
- 3. "A" DIAMETER MAY BE .001 LARGER THAN SHOWN FOR CADMIUM PLATED OR ALUMINUM COATED SLEEVES.
- 4. "B" IS THE THEORETICAL INTERSECTION FOR COUNTERSINKING.
- 5. DOUBLE DIMPLING IS RECOMMENDED BELOW .078 SHEET THICKNESS FOR .125 DIA., BELOW .100 FOR .156 DIA., BELOW .100 FOR .190 DIA., AND BELOW .126 FOR .250 DIA. IF DOUBLE DIMPLING CANNOT BE PERMITTED, USE A GRIP NUMBER 01.
- 6. "A" DIAMETER MAY BE .001 SMALLER BEYOND MINIMUM GRIP LENGTH.
- 7. ADJUST AS REQUIRED, WITHIN THESE LIMITS, TO SUIT MATERIAL AND APPLICATION.

DIMENSIONS IN INCHES

Y	PER ECN 15315: ADDED 108° MAX TO HEAD ANGLE. ADD FINISH TO LOCK RING COMPOSITION B.	CURRENT DESIGN ACTIVITY CAGE CODE 0HDW7	PROCUREMENT SPEC NAS1900	DRAWN BY J. SCHLOBOHM
			CHECKED BY	SIGNATURE ON FILE
ISSUED	3/14/1980	Unimatic® BLIND RIVET GENERAL PURPOSE, BULBED, MECHANICAL-LOCK-SPINDLE, 100° FLUSH HEAD 5056 ALUMINUM, MONEL & A-286 CRES RIVET SLEEVES	SMLS100 - ()	
REVISED	03/20/2023			
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- 8. MINIMUM ULTIMATE SHEAR AND TENSILE STRENGTHS, IN POUNDS, OF INSTALLED BLIND RIVET.
- 9. FOR INSTALLATION IN 100° ± 1° COUNTERSINKS FOR COMPOSITION "B" MATERIAL AND 100° ± 1° 30' FOR COMPOSITION "EU" & "M" MATERIAL.
- 10. BLIND SIDE HEAD MAY BE INSTALLED ON 5° MAXIMUM SLOPE
- 11. OPTIONAL "U" CODE DRIVE WASHER FACILITATES INSTALLATION WITH BLUNT NOSE TOOL. DRIVE WASHER NOT PART OF THE INSTALLED FASTENER.
- 12. SPINDLE IS COLORED YELLOW (LOCATION OPTIONAL) OR SPINDLE HEAD IS IDENTIFIED WITH A DEPRESSED "S".
- 13. THIS RIVET IS INTENDED FOR GENERAL PURPOSE USE IN BOTH THICK SHEET STACKUP AND IN THIN SHEET OR DOUBLE DIMPLED APPLICATIONS.
- 14. UNIMATIC INSTALLATION FOR CLOSE CLEARANCE APPLICATION OR FOR USE IN AUTOMATED EQUIPMENT. INSTALLS WITH SINGLE STROKE OF THE PULLING HEAD.
- 15. COMPLETE COVERAGE OF SLEEVE INTERNAL FEATURES IS NOT REQUIRED. OVER SPRAY ONTO THE INTERNAL FEATURES IS ACCEPTABLE
- 16. CHROMATE ALUMINUM COAT INACTIVE FOR NEW DESIGN AND PROCUREMENT. USE UNTIL DEPLETION. SUPERSEDED BY NON-CHROMATE ALUMINUM COAT.

EXAMPLES OF PART NUMBERS

SMLS100-B05-04 • 5056 ALUMINUM RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250
 SMLS100-B05-04FC • 5056 ALUMINUM RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, CHEMICAL FILM SLEEVE, SPINDLE, AND LOCK RING.
 SMLS100-EU05-04 • A-286 CRES RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, PASSIVATE FINISH.
 SMLS100-EU05-04C • A-286 CRES RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, CADMIUM PLATED SLEEVE.
 SMLS100-EU05-04EL • A-286 CRES RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, DICHRONITE DL-5 DRY FILM LUBRICANT. (PIN ONLY)
 SMLS100-EU05-04U • A-286 CRES RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, PASSIVATE FINISH WITH OPTIONAL DRIVE WASHER.
 SMLS100-M05-04 • MONEL RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, UNPLATED SLEEVE.
 SMLS100-M05-04A • MONEL RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, ALUMINUM COATED SLEEVE.
 SMLS100-M05-04C • MONEL RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, CADMIUM PLATED SLEEVE.
 SMLS100-M05-04P • MONEL RIVET, .156 DIAMETER, GRIP RANGE .188 TO .250, LUBRICATED AS REQUIRED.

TABLE II

GRIP DASH NO. 5	SMLS100-()04 (.125 DIA.)				SMLS100-()05 (.156 DIA.)				SMLS100-()06 (.190 DIA.)				SMLS100-()08 (.250 DIA.)			
	GRIP RANGE		L	F	GRIP RANGE		L	F	GRIP RANGE		L	F	GRIP RANGE		L	F
	MIN.	MAX.	MAX	MAX	MIN.	MAX.	MAX	MAX	MIN.	MAX.	MAX	MAX	MIN.	MAX.	MAX	MAX
01	.057	.078	.213	.342	.075	.100	.238	.418								
02	.079	.125	.260	.431	.080	.125	.263	.446	.100	.125	.287	.500				
03	.126	.187	.323	.516	.126	.187	.336	.541	.126	.187	.350	.571	.126	.187	.427	.637
04	.188	.250	.385	.641	.188	.250	.398	.666	.188	.250	.412	.696	.188	.250	.460	.762
05	.251	.312	.448	.766	.251	.312	.461	.791	.251	.312	.475	.821	.251	.312	.522	.887
06	.313	.375	.510	.891	.313	.375	.523	.916	.313	.375	.537	.946	.313	.375	.585	1.012
07	.376	.437	.573	1.016	.376	.437	.586	1.041	.376	.437	.600	1.071	.376	.437	.647	1.137
08	.438	.500	.635	1.141	.438	.500	.648	1.166	.438	.500	.662	1.196	.438	.500	.710	1.262
09	.501	.562	.698	1.266	.501	.562	.711	1.291	.501	.562	.725	1.321	.501	.562	.772	1.387
10	.563	.625	.760	1.391	.563	.625	.773	1.416	.563	.625	.787	1.446	.563	.625	.835	1.512
11					.626	.687	.836	1.541	.626	.687	.850	1.571	.626	.687	.897	1.637
12									.688	.750	.912	1.696	.688	.750	.960	1.762
13													.751	.812	1.022	1.887
14													.813	.875	1.085	2.012

DIMENSIONS IN INCHES

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	ISSUED 3/14/1980	REVISIED 03/20/2023	Unimatic® BLIND RIVET GENERAL PURPOSE, BULBED, MECHANICAL-LOCK-SPINDLE, 100° FLUSH HEAD 5056 ALUMINUM, MONEL & A-286 CRES RIVET SLEEVES				CHECKED BY	SIGNATURE ON FILE
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TABLE III

RIVET COMPONENTS	COMPOSITION B	COMPOSITION EU	COMPOSITION M
COMPOSITIONS			
SLEEVE	5056 ALUMINUM PER QQ-A-430	A-286 CRES PER CHEMICAL RQMT OF AMS5737	MONEL PER QQ-N-281
SPINDLE	2024 ALUMINUM PER QQ-A-430	A-286 CRES PER CHEMICAL RQMT OF AMS5737	A-286 CRES PER CHEMICAL RQMT OF AMS5737
LOCK RING	5056 ALUMINUM PER QQ-A-430	A-286 CRES PER CHEMICAL RQMT OF AMS5737, OR 316 CRES (UNS S31600) PER CHEMICAL RQMT OF AMS5690	A-286 CRES PER CHEMICAL RQMT OF AMS5737, MONEL PER QQ-N-281, OR 316 CRES (UNS S31600) PER CHEMICAL RQMT OF AMS5690
FINISH OPTIONS			
SLEEVE	<ul style="list-style-type: none"> • NONE • AVAILABLE WITH SPECIAL COATINGS, SEE CODES BELOW 	<ul style="list-style-type: none"> • PASSIVATE PER AMS2700 • CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3 • ALUMINUM COAT PER NAS4006 	<ul style="list-style-type: none"> • NONE • CADMIUM PLATE PER AMS-QQ-P-416, TYPE II, CLASS 3 • ALUMINUM COAT PER NAS4006
SPINDLE	CHEMICAL FILM TREAT PER MIL-DTL-5541, CL 1A	PASSIVATE PER AMS2700 AND AMS-QQ-P-35	PASSIVATE PER AMS2700 AND AMS-QQ-P-35
LOCK RING	<ul style="list-style-type: none"> • NONE • CHEMICAL FILM TREAT PER MIL-DTL-5541, CL 1A 	PASSIVATE PER AMS2700 AND AMS-QQ-P-35	PASSIVATE PER AMS2700 AND AMS-QQ-P-35 FOR A-286 & 316 CRES ONLY

CODE:

FIRST SERIES OF TWO DIGIT NUMBERS FOLLOWING MATERIAL DESIGNATOR IS DIAMETER IN .0312 INCREMENTS.

SECOND SERIES OF TWO DIGIT NUMBERS FOLLOWING MATERIAL DESIGNATOR IS MAXIMUM GRIP IN .0625 INCREMENTS.

ADD "A" AFTER SECOND SERIES OF TWO DIGIT NUMBERS FOR ALUMINUM COATING PER NAS4006

ADD "B" AFTER BASIC NUMBER FOR COMPOSITION B ALUMINUM RIVET.

ADD "C" AFTER SECOND SERIES OF TWO DIGIT NUMBERS FOR CADMIUM PLATED RIVET SLEEVE.

ADD "EL" AFTER SECOND SERIES OF TWO DIGIT NUMBERS FOR DICHRONITE DL-5 DRY FILM LUBRICANT (PIN ONLY).

ADD "EU" AFTER BASIC NUMBER FOR COMPOSITION EU A-286 CRES RIVET.

ADD "FC" AFTER SECOND SERIES OF TWO DIGIT NUMBERS OF COMPOSITION B RIVETS FOR CHEMICAL FILM PER MIL-DTL-5541, CL 1A.

ADD "M" AFTER BASIC NUMBER FOR COMPOSITION M MONEL RIVET.

ADD "P" AFTER SECOND SERIES OF TWO DIGIT NUMBERS FOR DRY FILM LUBRICATION OR NONE AS REQUIRED TO DESIGNATE RIVET MAY BE SLOSH CLEANED WITH A-A-59281 CLEANER BEFORE INSTALLATION.

ADD "U" AFTER SECOND SERIES OF TWO DIGIT NUMBERS FOR RIVET WITH ADDED DRIVE WASHER.

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