

MBC® BLIND FASTENING SYSTEM

NAS1719, NAS1720, NAS1721



CHERRY

CHERRY®
AEROSPACE

SPS Fastener Division, a PCC Company

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LIMITED WARRANTY

Seller warrants the goods conform to applicable specifications and drawings and will be manufactured and inspected according to generally accepted practices of companies manufacturing industrial or aerospace fasteners. In the event of any breach of the foregoing warranty, Buyer's sole remedy shall be to return defective goods (after receiving authorization from Seller) for replacement or refund of the purchase price, at the Seller's option. Seller agrees to any freight costs in connection with the return of any defective goods, but any costs relating to removal of the defective or nonconforming goods or installation of replacement goods shall be Buyer's responsibility. SELLER'S WARRANTY DOES NOT APPLY WHEN ANY PHYSICAL OR CHEMICAL CHANGE IN THE FORM OF THE PRODUCT IS MADE BY BUYER. THE FOREGOING EXPRESS WARRANTY AND REMEDY ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES; ANY IMPLIED WARRANTY AS TO QUALITY, FITNESS FOR PURPOSE, OR MERCHANTABILITY IS HEREBY SPECIFICALLY DISCLAIMED AND EXCLUDED BY SELLER. This warranty is void if seller is not notified in writing of any rejection of the goods within one (1) Year after initial use by buyer of any power Riveter or ninety (90) days after initial use of any other product. Seller shall not be liable under any circumstances for incidental, special or consequential damages arising in whole or in part from any breach by Seller, AND SUCH INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES ARE HEREBY EXPRESSLY EXCLUDED.

Our policy is one of continuous development. Specifications shown in this document may be subject to changes introduced after publication.

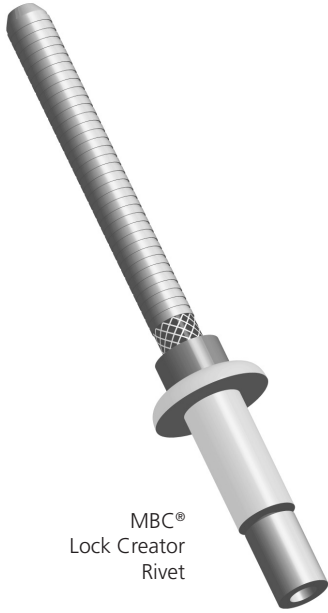
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NOTE: The properties, strengths, dimensions, installed characteristics and all other information in this catalog is for guidance only to aid in the correct selection of the products described herein and is not intended or implied as part of the warranty. All applications should be evaluated for functional suitability and available samples of the described parts can be requested for installed tests, suitability and evaluations.

ATTENTION: Blind rivets are not always a suitable substitute for solid rivets. Maintenance personnel are reminded that AC 43.13-1A chapter 2, section 3, stipulates: "Do not substitute hollow rivets for solid rivets in load carrying members without specific approval of the application by a representative of the Federal Aviation Administration. Blind rivets may be used in blind locations in accordance with the conditions listed in Chapter 5, provided the edge distances and spacings are not less than the minimum listed in paragraph 99d."

MBC® BLIND FASTENING SYSTEM

FEATURES & BENEFITS



MBC®
Lock Creator
Rivet

The industry approved Cherry MBC® system is one of the industry's simplest and most versatile riveting systems available today. This lightweight high strength riveting system features a flush break and mechanically locked stem which contributes substantially to the integrity and performance of the fastener.

The MBC® is available in aluminum and stainless steel versions. Both the aluminum and stainless steel series MBC® are available in 1/8" (3.2mm), 5/32" (4.0mm) and 3/16" (4.8mm) diameters, with flush, reduced flush or protruding head styles.

The standard MBC® rivet is a simple, two-piece assembly comprised of a MBC® rivet sleeve and a stem with an integral locking feature. For proper installation, the correct installation tool nose tip is required for each diameter of rivet. See page 9 for a selection of installation tooling.

The MBC® Lock Creator (MBC®-L/C) is the same fastener as the standard MBC® rivet with the addition of a lock creator anvil. This additional component simplifies installation of the fastener by allowing a single nose tip for installing the three available diameters.

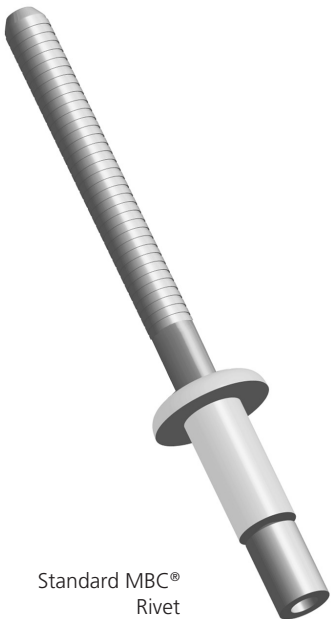
Whether standard MBC® or MBC®-L/C rivets are used, each rivet comes complete as a single-piece assembly, ready for installation.

FEATURES

- Manufactured to International Aerospace quality standards
- High strength to weight ratio
- Good hole fill capability
- Excellent sheet take-up
- Mechanically locked stem
- Flush break stem
- Wide grip range
- Low installed weight
- Quiet installation tooling

BENEFITS

- Contributes to high quality, durable end product
- Reduces weight of aircraft structures, which aids fuel savings
- Produces high strength joint and secure assembly
- Improves joint quality and reduces manufacturing costs
- Eliminates possibility of loose stems and contributes to design security and joint integrity
- Avoids stem shaving and lowers in-place costs
- Reduces inventory costs and operator errors
- Component weight saving without impairing structural integrity
- Greatly reduces production noise levels when replacing conventional bucked rivets

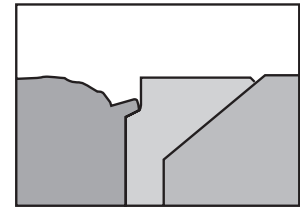
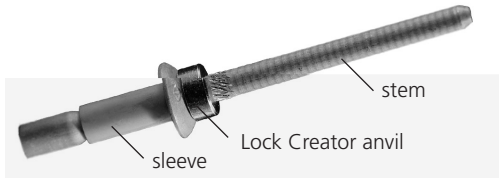


Standard MBC®
Rivet

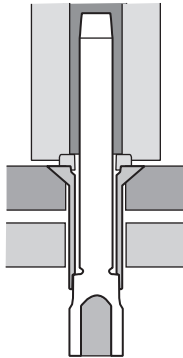
MBC® BLIND FASTENING SYSTEM

INSTALLATION SEQUENCE & PERFORMANCE DATA

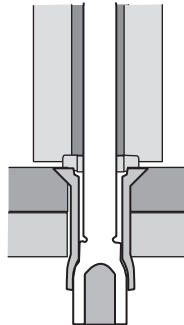
Typical installation sequence of MBC® rivets is shown here with the Lock Creator, a three-component design providing a unique lock feature.



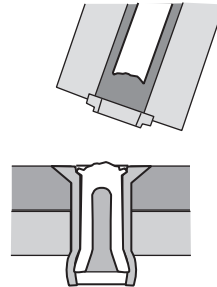
Detail of MBC® locking element



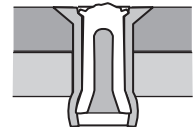
1.
MBC® L/C is placed in the nose tip of the tool and inserted into the prepared hole in the workpiece. One common nose tip will place all MBC® L/C diameters without tooling changes.



2.
The tool is activated and the jaws engage the rivet stem, exerting an axial pull.



3.
The single-acting installation tool continues to draw the stem into the rivet sleeve, to give a high clinch joint and complete hole fill. The Lock Creator anvil automatically forms the locking ring into the preformed rivet sleeve head recess.



4.
The stem breaks flush with the rivet head and is mechanically locked into the rivet sleeve, providing a secure, two-piece fastener system.

PERFORMANCE DATA

Values shown here are fastener capabilities only. Design values will be limited by bearing strength of the sheet material used.

Rivet Diameter	Minimum Ultimate Shear Strength in Steel Coupons		Minimum Ultimate Tension Strength in Steel Coupons			
	Aluminum	CRES	Aluminum		CRES	
	NAS1719H NAS1720H NAS1721H	NAS1719C NAS1720C NAS1721C	NAS1720H NAS1721H	NAS1719H	NAS1720C NAS1721C	NAS1719C
1/8" (-4)	450	1000	280	238	640	544
5/32" (-5)	700	1500	475	425	1100	935
3/16" (-6)	950	2200	700	595	1500	1275

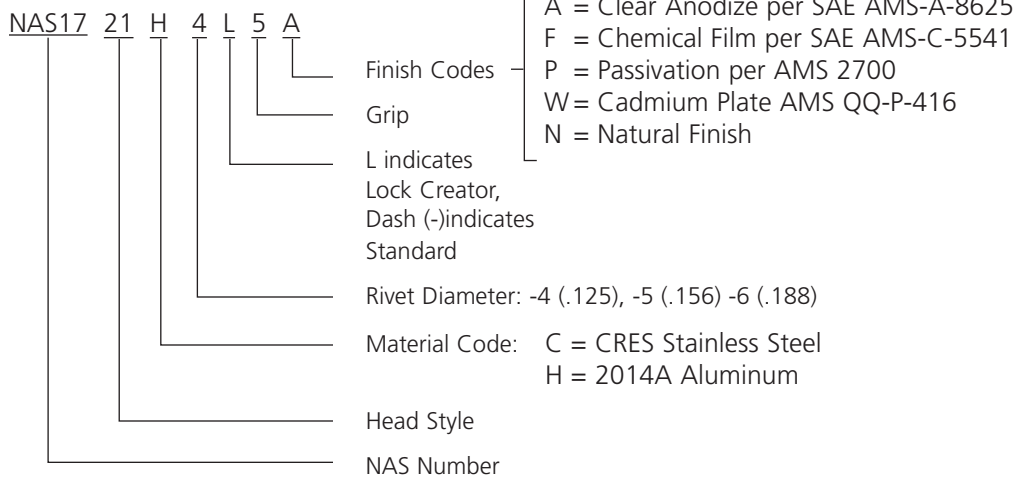
Rivet Material		Ultimate Shear Strength
Sleeve	Stem	
2014A Aluminum	7075 Aluminum	34,000 psi
A286 CRES	A286 CRES	78,000 psi

MBC® RIVET SELECTION

PRODUCT NUMBERING & NAS PART CONVERSION

NUMBERING SYSTEM

NAS Part Number Example:



NAS PART NUMBER & FINISH CODE CONVERSION

NAS Part Number	Part Number				
	NAS Finish Code				
	A	F	P	W	N
NAS1719H(-)	4867-0()()	4806-0()()	—	—	—
NAS1719H(L)	4967-0()()	4906-0()()	—	—	—
NAS1720H(-)	4801-0()()	4804-0()()	—	—	4811-0()()
NAS1720H(L)	4901-0()()	4904-0()()	—	—	4911-0()()
NAS1721H(-)	4807-0()()	4805-0()()	—	—	4817-0()()
NAS1721H(L)	4907-0()()	4905-0()()	—	—	4917-0()()
NAS1719C(-)	—	—	4861-0()()	4865-0()()	—
NAS1719C(L)	—	—	4961-0()()	4965-0()()	—
NAS1720C(-)	—	—	4831-0()()	4851-0()()	—
NAS1720C(L)	—	—	4931-0()()	4951-0()()	—
NAS1721C(-)	—	—	4837-0()()	4857-0()()	—
NAS1721C(L)	—	—	4937-0()()	4957-0()()	—

NAS GRIP CONVERSION

NAS	Cherry	NAS	Cherry	NAS	Cherry
4-1	-0405	5-1	-0506	6-1	-0607
4-2	-0407	5-2	-0508	6-2	-0609
4-3	-0409	5-3	-0510	6-3	-0611
4-4	-0411	5-4	-0512	6-4	-0613
4-5	-0413	5-5	-0514	6-5	-0615
4-6	-0415	5-6	-0516	6-6	-0617
—	—	5-7	-0518	6-7	-0619
—	—	5-8	-0520	6-8	-0621

MBC® RIVET SELECTION

INSTALLED WEIGHTS (Installed pounds per 1000 pieces)

THE MBC® WEIGHT ADVANTAGE

NAS Dia. No.	NAS Grip No.	Aluminum			A286CRES	
		Protruding Head	Flush Head	Reduced Flush Head	Protruding Head	Flush Head
		NAS1720H	NAS1721H	NAS1719H	NAS1720C	NAS1721C
-4	-1	0.28	—	—	1.04	—
	-2	0.35	0.27	0.23	1.26	0.82
	-3	0.42	0.34	0.30	1.46	1.04
	-4	0.49	0.41	0.37	1.66	1.24
	-5	0.56	0.48	0.45	1.88	1.44
	-6	0.63	0.55	0.52	2.08	—
-5	-1	0.59	—	—	—	—
	-2	0.70	0.58	0.39	2.22	1.30
	-3	0.81	0.69	0.51	2.51	1.62
	-4	0.93	0.80	0.63	2.80	1.94
	-5	1.03	0.91	0.74	3.09	2.24
	-6	1.14	1.02	0.86	3.38	2.56
	-7	1.25	1.13	0.97	—	—
	-8	1.36	1.24	1.09	—	—
-6	-1	1.08	—	—	—	—
	-2	1.22	0.93	—	3.48	2.40
	-3	1.37	1.08	—	3.97	2.87
	-4	1.52	1.23	—	4.48	3.35
	-5	1.67	1.38	—	4.96	3.81
	-6	1.82	1.53	—	5.47	4.28
	-7	1.97	1.68	—	5.95	4.74
	-8	2.12	1.83	—	6.43	5.22

THE MBC® GRIP ADVANTAGE

NAS Grip Number	MBC® & NAS1722 Grip Range		NAS1400 Grip Range	
	Min.	Max.	Min.	Max.
-1	*	.078	*	.062
-2	*	.141	.063	.125
-3	.109	.203	.126	.187
-4	.172	.266	.188	.250
-5	.234	.328	.251	.312
-6	.297	.391	.313	.375
-7	.359	.453	.376	.437
-8	.422	.516	.438	.500

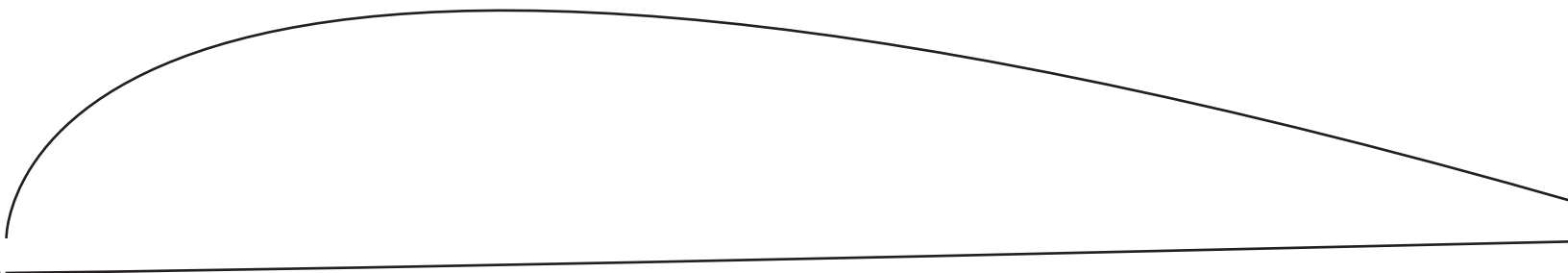
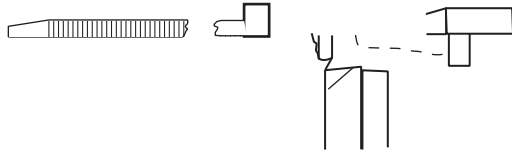
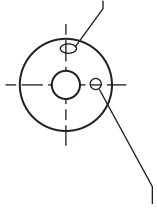
* Refer to the product standard pages for minimum grips.

PART NUMBER CONVERSIONS

Cherry Part No.	Industry Part No.
4801-0() ()	AS64403-() () NAS1720H()-()A ASNA0080-() ()A
4901-0() ()	AS64403L() () NAS1720H()L()A ASNA0080-() ()ALC
4807-0() ()	AS64400-() () NAS1721H()-()A ASNA0079-() ()A
4907-0() ()	AS64400L() () NAS1721H()L()A ASNA0079-() ()ALC
4804-0() ()	NAS1720H()-()F
4904-0() ()	NAS1720H()L()F
4805-0() ()	NAS1721H()-()F
4905-0() ()	NAS1721H()L()F
4806-0() ()	NAS1719H()-()F
4906-0() ()	NAS1719H()L()F
4811-0() ()	NAS1720H()-()N ASNA0080-() ()B

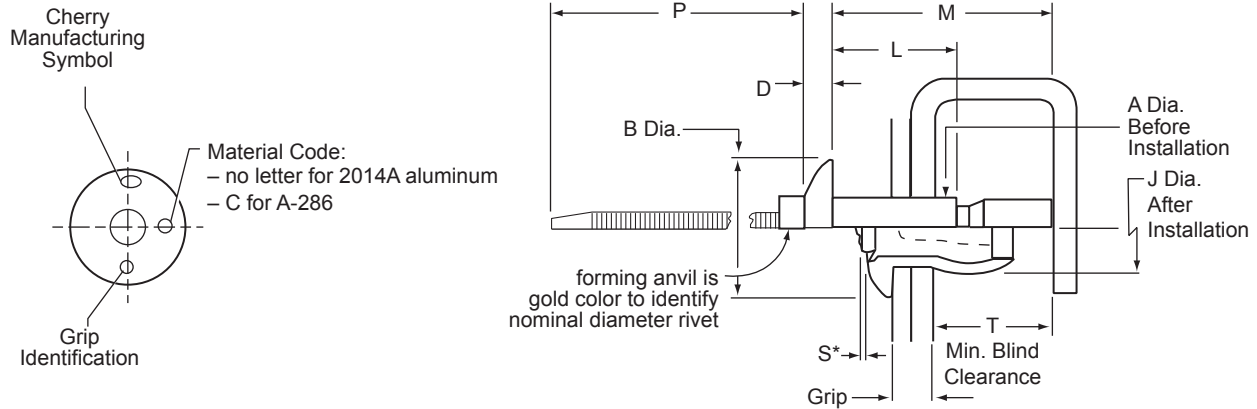
Cherry Part No.	Industry Part No.
4911-0() ()	NAS1720H()L()N ASNA0080-() ()BLC
4817-0() ()	NAS1721H()-()N
4917-0() ()	ASNA0079-() ()B NAS1721H()L()N ASNA0079-() ()BLC
4867-0() ()	NAS1719H()-()A
4967-0() ()	NAS1719H()L()A
4851-0() ()	AS64404-() () NAS1720C()-()W ASNA0080-() ()C
4951-0() ()	AS64404L() () NAS1720C()L()W ASNA0080-() ()CLC
4831-0() ()	AS64405-() () NAS1720C()-()P ASNA0080-() ()D
4931-0() ()	AS64405L() () NAS1720C()L()P ASNA0080-() ()DLC

Cherry Part No.	Industry Part No.
4857-0() ()	AS64401-() () NAS1721C()-()W ASNA0079-() ()C
4957-0() ()	AS64401L() () NAS1721C()L()W ASNA0079-() ()CLC
4837-0() ()	AS64402-() () NAS1721C()-()P ASNA0079-() ()D
4937-0() ()	AS64402L() () NAS1721C()L()P ASNA0079-() ()D
4861-0() ()	NAS1719C()-()P
4961-0() ()	NAS1719C()L()P
4865-0() ()	NAS179C()-()W
4965-0() ()	NAS1719C()L()W



MBC® LOCKED STEM RIVET NAS1720

NOMINAL DIAMETER PROTRUDING HEAD NASM20470 HEAD STYLE



Diameter (Dash No.)	A (Before Installation)	B Max	D Max	S*	J Ref	P Ref	Recommended Hole Size	Drill No.
1/8" (-4)	.128/.125	.255	.059	+.005 -.015	.150	1.15	.129-.132	#30
5/32" (-5)	.159/.156	.317	.072	+.000 -.020	.190	1.25	.160-.164	#20
3/16" (-6)	.191/.188	.380	.085	+.000 -.030	.230	1.25	.192-.196	#10

Grip Limits		1/8" Diameter				5/32" Diameter				3/16" Diameter			
Min	Max	Dash No.	L Max	M Max	T Min	Dash No.	L Max	M Max	T Min	Dash No.	L Max	M Max	T Min
.020	.078	-0405	.186	.35	.19	—	—	—	—	—	—	—	—
.047	.141	-0407	.249	.45	.23	-0508	.280	.51	.260	-0609	.311	.54	.28
.109	.203	-0409	.311	.58	.29	-0510	.342	.60	.300	-0611	.374	.66	.33
.172	.266	-0411	.374	.69	.34	-0512	.405	.71	.350	-0613	.436	.78	.39
.234	.328	-0413	.436	.80	.39	-0514	.467	.82	.390	-0615	.499	.90	.44
.297	.391	-0415	.499	.91	.44	-0516	.530	.95	.460	-0617	.561	1.01	.50
.359	.453	—	—	—	—	—	—	—	—	-0619	.623	1.12	.55
.422	.516	—	—	—	—	—	—	—	—	-0621	.685	1.27	.62

Rivet Prefix	Material		Finish	
	Sleeve	Stem	Sleeve	Stem
4931 NAS1720CxLxP	A286 CRES AMS 5731, AMS 5732, AMS 5734, or AMS 5737	A286 CRES AMS 5731	Passivate per AMS 2700	Passivate per AMS 2700
4951 NAS1720CxLxW			Cad Plate per AMS QQ-P-416	
4901 NAS1720HxLxA	2014A Aluminum Alloy per BS EN 2100	7075 Alum Alloy per QQ-A-225/9 or QQ-A-430	Anodize per SAE AMS-A-8625	Yellow Anodize per SAE AMS-A-8625
4904 NAS17120HxLxF			Chem Film per SAE AMS-C-5541	Yellow Anodize per SAE AMS-A-8625
4911 NAS1720HxLxN			Natural	Clear Anodized per SAE AMS-A-8625

Notes:

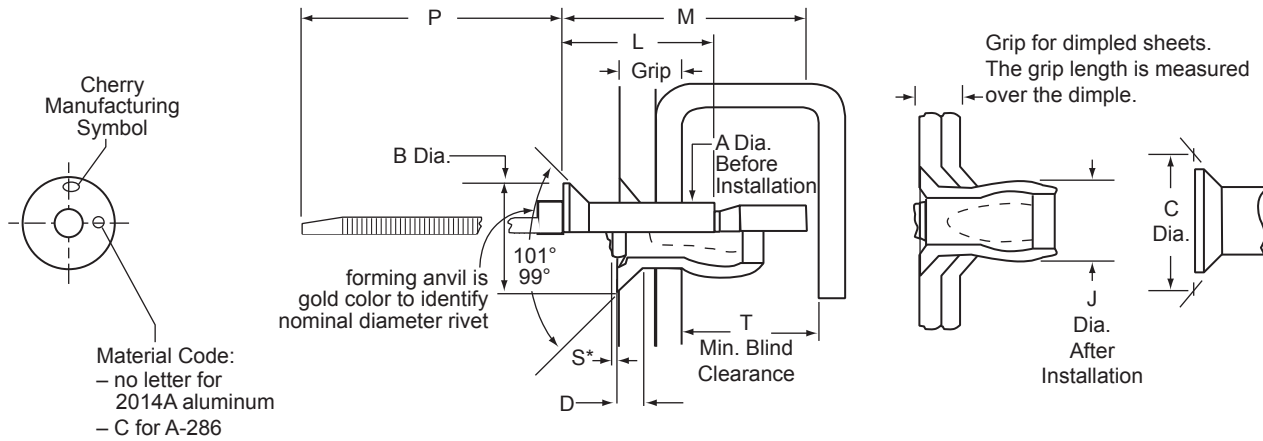
MBC® rivets are ready for use as supplied and must not be degreased or modified.

* Plus (+) "S" Dimension indicates stem projection above top of rivet head. Minus (-) "S" Dimension indicates stem below top of rivet head.

** Minimum grips: -4 = .062, -5 = .075, -6 = .090

MBC® LOCKED STEM RIVET NAS1721

NOMINAL DIAMETER 100° FLUSH HEAD NASM20426 HEAD STYLE



Diameter (Dash No.)	A (Before Installation)	B Min	D Ref	S *	J Ref	C Max	P Ref	Recommended Hole Size	Drill No
1/8" (-4)	.128/.125	.208	.041	+.005 –.015	.150	.229	1.15	.129–.132	#30
5/32" (-5)	.159/.156	.267	.053	+.000 –.020	.190	.290	1.25	.160–.164	#20
3/16" (-6)	.191/.188	.329	.068	+.000 –.030	.230	.357	1.25	.192–.196	#10

Grip Limits		1/8" Diameter				5/32" Diameter				3/16" Diameter			
Min	Max	Dash No.	L Max	M Max	T Min	Dash No.	L Max	M Max	T Min	Dash No.	L Max	M Max	T Min
**	.141	-0407	.263	.39	.20	-0508	.274	.43	.20	-0609	.308	.47	.22
.109	.203	-0409	.325	.49	.24	-0510	.336	.55	.28	-0611	.371	.59	.28
.172	.266	-0411	.388	.62	.30	-0512	.399	.65	.31	-0613	.433	.70	.33
.234	.328	-0413	.450	.73	.35	-0514	.461	.76	.36	-0615	.496	.82	.39
.297	.391	-0415	.508	.84	.39	-0516	.524	.87	.41	-0617	.558	.94	.44
.359	.453	—	—	—	—	—	—	—	—	-0619	.621	1.06	.50
.422	.516	—	—	—	—	—	—	—	—	-0621	.683	1.16	.55

Rivet Prefix	Material		Finish	
	Sleeve	Stem	Sleeve	Stem
4937 NAS1721CxLxP	A286 CRES AMS 5731, AMS 5732, AMS 5734, or AMS 5737	A286 CRES AMS 5731	Passivate per AMS2700	Passivate per AMS2700
4957 NAS1721CxLxW			Cad Plate per AMS QQ-P-416	
4907 NAS1721HxLxA	2014A Aluminum Alloy per BS EN 2100	7075 Alum Alloy per QQ-A-225/9 or QQ-A-430	Anodize per SAE AMS-A-8625	Yellow Anodize per SAE AMS-A-8625
4905 NAS1721HxLxF			Chem Film per SAE AMS-C-5541	Yellow Anodize per SAE AMS-A-8625
4917 NAS1721HxLxN			Natural	Yellow Anodized per SAE AMS-A-8625

Notes:

MBC® rivets are ready for use as supplied and must not be degreased or modified.

* Plus (+) "S" Dimension indicates stem projection above top of rivet head. Minus (–) "S" Dimension indicates stem below top of rivet head.

** Minimum grips: -4 = .062, -5 = .075, -6 = .090

MBC® BLIND FASTENING SYSTEM

INSTALLATION TOOLS

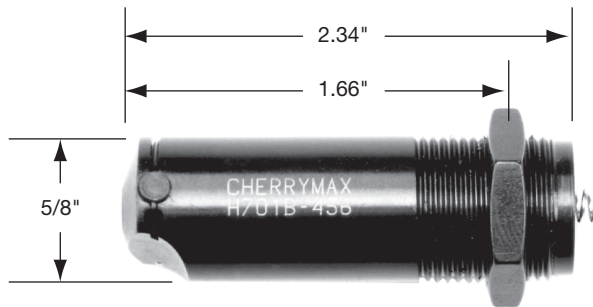
The riveter and pulling head combinations shown in the chart below will install the rivets identified in this catalog. Rivets with long grip dash numbers may require multiple strokes of the riveting tool.

MBC LOCK CREATOR

Riveter	Pulling Head/Insert	1/8"	5/32"	3/16"*
G800	included			
G704B or G746A	H747-456 or H782			

STANDARD MBC

Riveter	Pulling Head/Insert	1/8"	5/32"	3/16"*
G800	H800 with 782-4MBC nose piece			
G704B or G746A	H782 w/782-4MBC nose piece or H746-4MBC			
G800	H800 with 782-5MBC nose piece			
G704B or G746A	H782 w/782-5MBC nose piece or H746-5MBC			
G800	H800 with 782-6MBC nose piece			
G704B or G746A	H782 w/782-6MBC nose piece or H746-6MBC			



H701B-456 Pulling Head



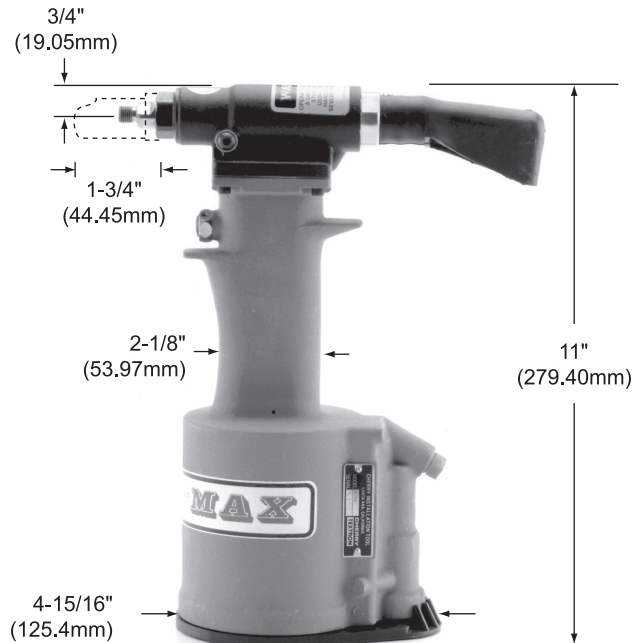
H782 Pulling Head

MBC® BLIND FASTENING SYSTEM

FEATURES & BENEFITS

G746A POWER RIVETER

The G746A power riveter is a pneumatic-hydraulic tool designed specifically for the most efficient installation of MBC® rivets. Its durable, all metal housing makes this extremely robust tool ideal for use in rugged shop environments. It has many ergonomic features; very light weight, comfortable fit in the operator's hand and it can be operated in any position with one hand. Extensions are available for extending the pulling heads to reach limited access areas.



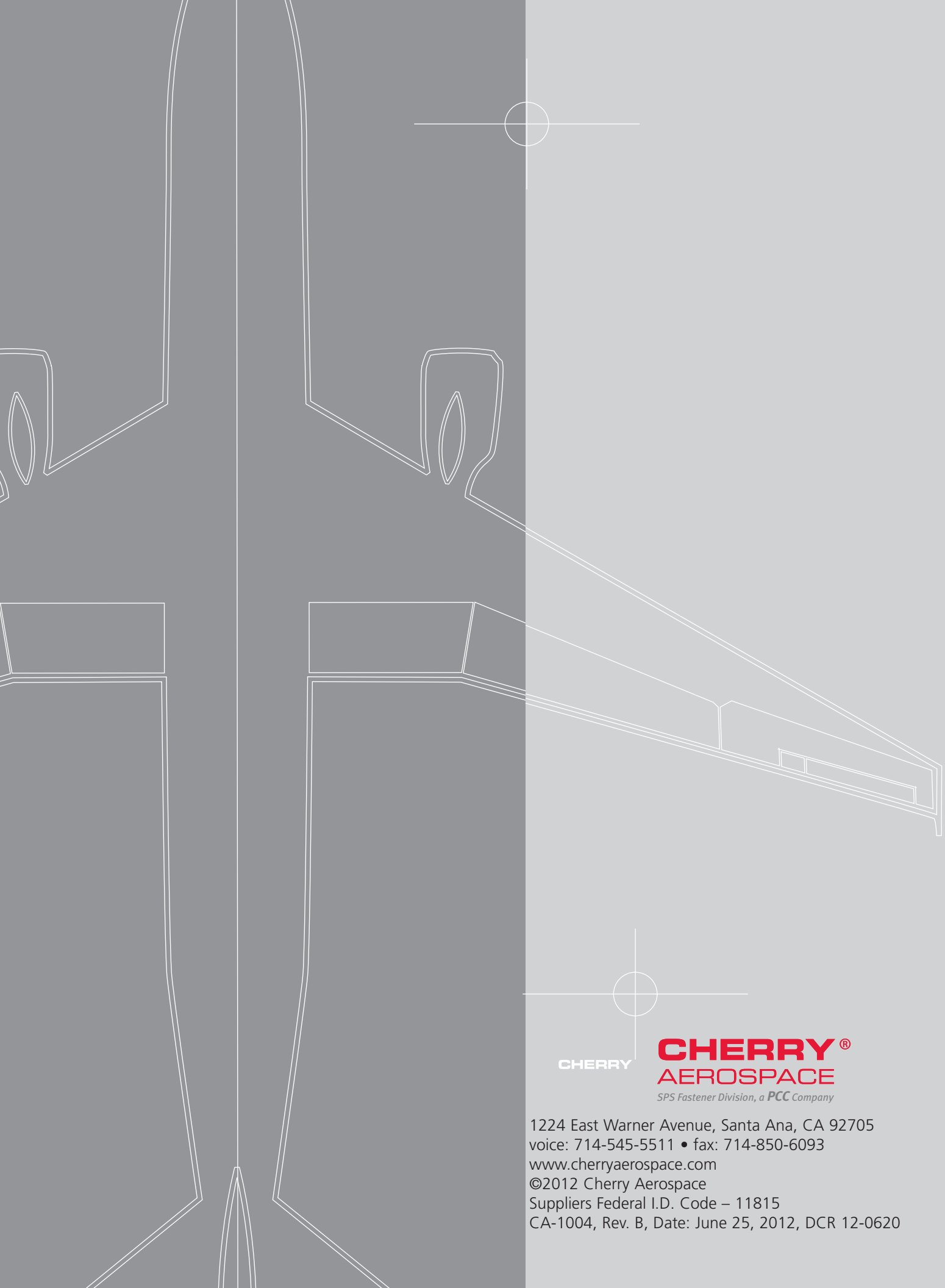
G746A Power Riveter

G800 LIGHTWEIGHT HAND RIVETER

The G800 hydraulic riveting tool provides the versatility of pneumatic-hydraulic riveter with a lightweight, high pull strength ratio not found in other hand riveters. A proprietary, 2-stage hydraulic power cylinder eases pulling of the handle, eliminating the strain normally endured to install a high-strength fastener.

The G800 hand riveter can install a variety of blind fastener styles, diameters, head configurations, and material combinations. The G800 with the standard pulling head can install CherryMAX® and SST® blind rivets in -4, -5, -6, diameters, and -05, -06 diameter Maxibolt™ blind bolts by simply changing the pulling head. The straight pulling head is provided with the tool.





CHERRY

CHERRY®
AEROSPACE

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