

FED. SUPPLY CLASS

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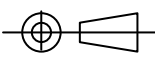
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AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME
PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE:

ISSUE DATE: MARCH 1953
REVISION DATE: JUNE 30, 2014

FORM 12-01

THIRD ANGLE PROJECTION		CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 31
PROCUREMENT SPECIFICATION		TITLE FASTENER CODE	CLASSIFICATION STANDARD PRACTICE
NONE			NAS 523 SHEET 1 OF 48



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1. GENERAL DESCRIPTION OF FASTENER CODE

1.1 Scope

This STANDARD PRACTICE includes all types of fasteners in which the installation thereof imparts a permanent deformation which would force the destruction of the fastener to remove it.

1.2 Limitations

Fasteners which would be included in the above "Types of Fasteners" such as staples or wire stitching are not covered by the code.

2. FEATURES COVERED AND METHOD OF SHOWING

The symbol includes a single cross whose intersection is at the location of the fastener. When space does not permit, the symbol may be located off to the side and the location of the fastener indicated by an arrow. Fastener identity, size, installation requirements etc. shall be indicated by a letter-numeric coding within the quadrants of the cross as defined herein. Quadrant orientation of the symbol is determined by the direction of the letter-numeric coding as written within the symbol. When the symbol is viewed in a position such that the letters are upright, the upper left hand quadrant is NW etc. The following examples illustrate the basic symbol and quadrant identity.

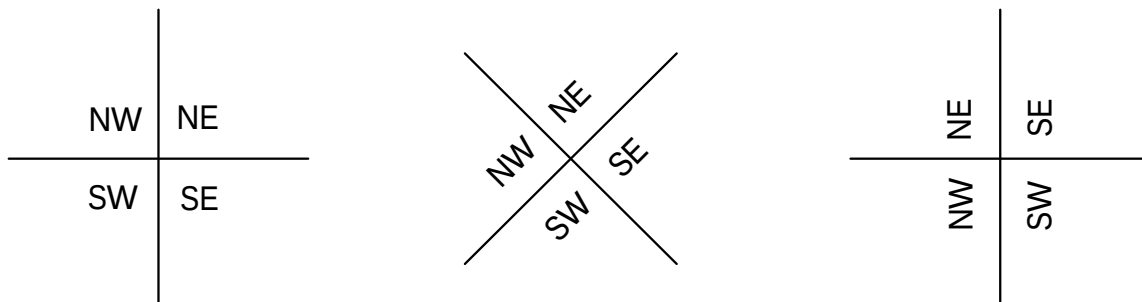
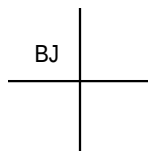


FIGURE 1 – QUADRANT IDENTITY

2.1 Northwest Quadrant

Fastener Identity: The identity of the fastener is shown in the NW quadrant by a letter code as listed herein (see Section 4, Application). The code is made up of non-significant letters and defines all features of the fasteners except diameter and grip. The code letters are assigned in sequence with the exception of the letters G, I, Q and U, and the combinations AD, AN and DD. These letters shall not be used in the fastener symbol. See Paragraph 5.3 RESERVED CODES.



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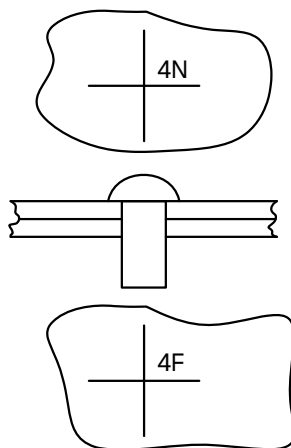
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2.2 Northeast Quadrant

Fastener Diameter and Location of the Manufactured Head: The fastener diameter and location of the manufactured head is shown in the NE quadrant by a numeric-letter code as defined below. The fastener diameter is shown by a number which is the dash number that represents the diameter in the full part number. If the diameter is designated by digits of the basic part number, then the significant digits shall be shown. The location of the manufactured (preformed) head of the fastener is defined by the code letter "F" for "Far Side" and "N" for "Near Side". When the location of the manufactured head is insignificant or otherwise determined by the drawing itself, the code letter may be omitted.

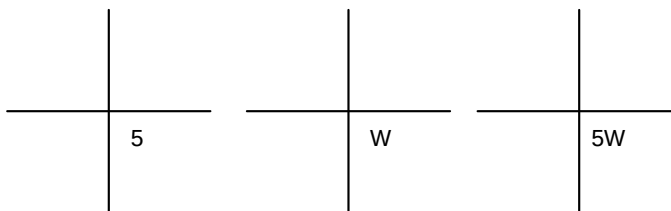


2.3 Southeast Quadrant

2.3.1 Length and Spot Weld Alternate

The length and permission to spot weld as an alternative assembly method is shown in the SE quadrant by a numeric-letter code as defined below.

- 2.3.1.1 The length is shown by a number which is the dash number that represents the length in the full part number.
- 2.3.1.2 Engineering permission to spot weld in lieu of using the fastener called for is denoted by the letter "W".
- 2.3.1.3 The preceding data is an optional feature of the code, but the use of any alternate method of designating the preceding data within the symbol is not optional.



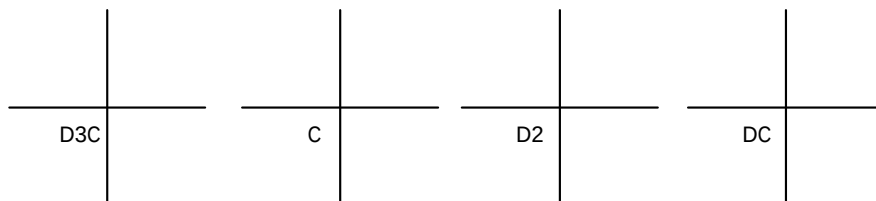
2.4 Southwest Quadrant

2.4.1 Dimple and Countersink Data

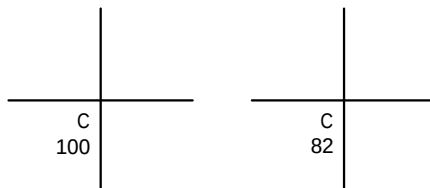
The sheets to be dimpled or countersunk are shown in the SW quadrant by a numeric-letter code as defined below, not to exceed three digits per line. Unless otherwise noted, the nominal angle for the dimple or countersink shall be the same as the angle of the manufactured rivet head.

2.4.1.1 The letter "D" is used to show a "dimpling" (form countersinking) operation and when more than one sheet is dimpled, a number follows the "D" to show how many sheets are dimpled.

2.4.1.2 The letter "C" is used to show a countersinking (machine countersinking) operation. No number is used after the countersinking designation because it is the responsibility of the individual designer to see that the thickness of materials to be countersunk for a flush condition will not violate applicable company requirements.

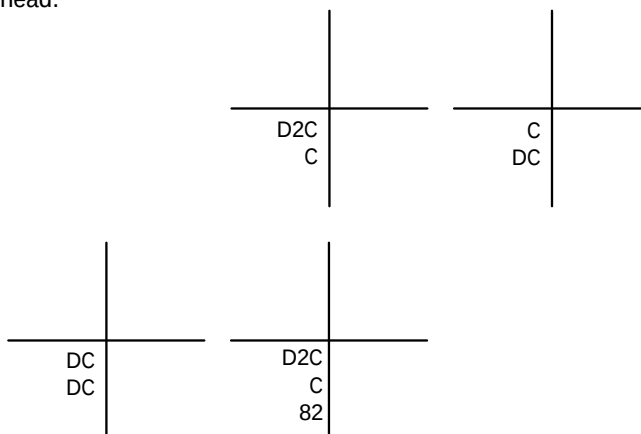


2.4.1.3 Protruding head rivets to be upset flush may be indicated by placing the numeric-letter code on the first line which indicates the dimple or countersink operation for the upset end. The second line indicates the nominal angle for the upset end.

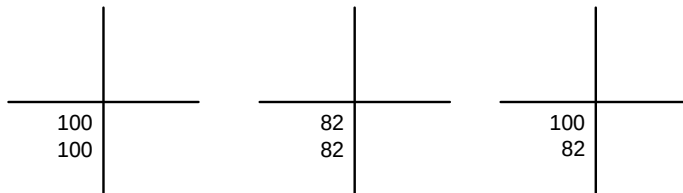


2.4.1.4 The flush both sides condition may be indicated by placing the numeric-letter code on separate lines where:

- The first line indicates the dimple or countersink operation for the manufactured head.
- The second line indicates the dimple or countersink operation for the upset end.
- The third line indicates the nominal angle for the upset end when different than the angle of the manufactured head.



- Optionally, when the dimple-countersink operation for the double flush rivets are controlled by applicable company requirements, the instruction to double flush may be indicated by noting the angle of the manufactured head on the first line and the angle of the upset end on the second line.



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- 2.4.2 The use of the dimple-countersink feature of the symbol is optional. Any alternate method of designating the dimple-countersink feature for the flush one or both sides within the symbol is not optional.

3. APPLICATION

3.1 Alphabetical Part Number

The Alphabetical Part Number Listing is used by the Engineering Department to obtain the basic code designation of a given fastener for use in the northwest quadrant.

3.2 Additional Data

Additional data for other quadrants shall be added as covered in Paragraphs 3.2 through 3.4.

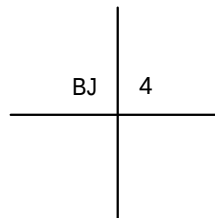
3.3 Notes or Decals

A general note or decal (stamp or stick-on) similar to the Sample Decal Layout shown in Paragraph 4.5 should be added to the drawing giving a cross reference to the codes used so that the identity of the fasteners may be determined on each drawing itself. (The shop has no need for reference to the Fastener Code Index.) Decals (stamps or stick-ons) for this purpose, if used instead of General Notes, may be prepared by each manufacturer to suit his own usage. Such Decals may contain additional data not in conflict with the NASC Code and such Decals may leave off optional items which the individual company chooses not to use. A local note or direct callout may always be used in place of the code at the discretion of the individual company.

3.4 Examples and Expansion of Typical Symbols

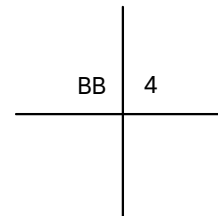
3.4.1 MS20470AD4 Rivet, Universal Head

(Head direction is not shown – assumed to be insignificant.)



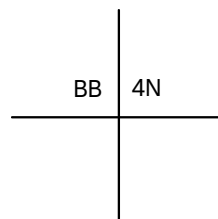
3.4.2 MS20426AD4 Rivet, 100° Countersunk Head

(Head location not shown – assumed to be obvious in this case; since there is always a reason for using countersunk rivets, the head location of this type can never be insignificant.)



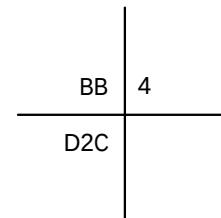
3.4.3 MS20426AD4 Rivet, 100° Countersunk Head

Manufactured head to be located on the near side.



3.4.4 MS20426AD4 Rivets, 100° Countersunk Head

First and second sheets adjacent to manufactured head to be dimpled, remainder of sheets to be countersunk. The location of the manufactured head is assumed to be obvious from the drawing in this case. (Some companies will not use this Southwest Quadrant as the information regarding dimpling and countersinking is covered in their process specification manual.)



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3.4.5 NAS1468 Lockbolt, Protruding Head, Close Tolerance Shank, including NAS1080 Collar

The location of the manufactured head is assumed to be insignificant or obvious in this case.

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3.5 Sample Decal Layout

This suggested decal is intended to be included on all production drawings which will use the rivet code and is intended to give the shop all the information needed to completely identify the fasteners. As many as are required of the eight blanks in the lower portion are to be filled in by the draftsman to identify the basic code of the fasteners used on the particular drawing. (This suggested decal is composed for use at the top of a drawing. If the decal is to be used at the bottom of the drawing, the blanks could be provided at the top of the decal.) When the double flush or the flush upset end conditions are to be used, the following notes shall be incorporated in the decal or appear elsewhere on the drawing as applicable.

NAS523 FASTENER CODE

Basic Code: BJ = MS20470AD BB = MS20426AD DT = NAS1465-1468 & NAS1080	Dash Number for Diameter: N = Manufactured head near side F = Manufactured head far side
D = Dimple Figure = No. of sheets to be dimpled C = Countersunk (For special flush conditions only, see /a/, /b/, and /c/)	Dash Number for Length W = Spotweld optional

- /a/ For Flush Upset End on Protruding Head Rivet
1st Line – Dimple or Countersink
2nd Line – Nominal Upset Angle
- /b/ Flush Both Sides
1st Line – Manufactured Head Dimple or Countersink
2nd Line – Upset Head Dimple or Countersink
3rd Line – Upset Head Angle Different Manufactured Head
- /c/ Flush Both Sides Optional
1st Line – Nominal Angle of Manufactured Head
2nd Line – Nominal Angle of Upset Head

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4. SUPERSEDURES AND SPECIAL NOTES

4.1 Supersedures (Same Code Retained)*

AF007M Supersedes BR-125-6
AF007M()C Supersedes BR-125-C6

CD-PN()100 Supersedes CP-PN()100
CD-PN()A Supersedes CP-PN()A

CR156 Supersedes CR156C
CR157 Supersedes CR157C
CR162 Supersedes CR162C
CR163 Supersedes CR163C

M7885/2 Supersedes CR3213
M7885/3 Supersedes CR3212
M7885/4 Supersedes CR3523
M7885/5 Supersedes CR3522
M7885/6 Supersedes CR3243
M7885/7 Supersedes CR3242
M7885/8 Supersedes CR3553
M7885/9 Supersedes CR3552

MS20426 Supersedes AN426 (Identical Mat'l Coding)
MS20427 Supersedes AN427 (Identical Mat'l Coding)
MS20435 Supersedes AN435 (Identical Mat'l Coding)
MS20450 Supersedes AN450 (Identical Mat'l Coding)
MS20470 Supersedes AN470 (Identical Mat'l Coding)
MS20604AD()C Supersedes 1247 and 7230
MS20604AD()C Supersedes RV500 and RV500C
MS20605AD()C Supersedes 1249 and 7229
MS20605AD()W Supersedes RV501 and RV501C
MS90353 Supersedes B100-T
MS90354 Supersedes BP-T

NAS525/NAS179 Supersedes HSS1P/NAS179
NAS525/NAS528 Supersedes HS51P/HS15
NAS529/NAS179 Supersedes HS52P/NAS179
NAS529/NAS528 Supersedes HS52P/HS15
NAS1414-NAS1422 Supersedes SLS100
NAS1424-NAS1432 Supersedes SLSP
NAS1436-NAS1442 Supersedes SAL100
NAS1446-NAS1452 Supersedes SALP
NAS1456-NAS1462 Supersedes R3002
NAS1465-NAS1472 Supersedes R3001

NAS1475-NAS1482 Supersedes R3014
NAS1516-NAS1522 Supersedes ACT509N-E and
ACT509H-E

NAS1525-NAS1532 Supersedes ALPPH-E and ALPPN-E
NAS1535-NAS1542 Supersedes ALP426 E
NAS1546-NAS1552 Supersedes ASCT509-E
NAS1555-NAS1562 Supersedes ALSF-E

NAS1919B Supersedes MLSP-B
NAS1919C Supersedes MLSP-EU
NAS1919M Supersedes MLSP-M
NAS1921B Supersedes MLS100-B
NAS1921C Supersedes MLS100-EU
NAS1921M Supersedes MLS100-M

RV200 Supersedes RV200C
RV201 Supersedes RV201C
RV202 Supersedes RV202C
RV203 Supersedes RV203C
RV250 Supersedes RV250C
RV251 Supersedes RV251C
RV290 Supersedes RV290C
RV291 Supersedes RV291C
RV502 Supersedes RV502C
RV5033 Supersedes RV5033C
RV550 Supersedes RV550C
RV551 Supersedes RV551C
RV590 Supersedes RV590C
RV591 Supersedes RV591C
1202 Supersedes 104
1204 Supersedes 224

4.2 Supersedures (New Code Assigned)

Superseded codes are indicated by numbered flags adjacent to the affected codes. The flag is placed adjacent to both the superseded code and the superseding code. The number refers to the appropriate flag-note as detailed below.

- | | |
|--|---|
| /1/ Code HW is inactive, superseded by AAD. | /38/ Code AT is inactive, superseded by LN. |
| /2/ Code EX is inactive, superseded by AB. | /39/ Code HX is inactive, superseded by SH. |
| /3/ Code EY is inactive, superseded by AC. | /40/ Codes EZ, FA, FB, FC, FK, FL, HB, HC, HY, HZ, JM, JO, KX, KY, MY, MZ, NL, OY, OZ, PA, PC, VK, AEP, AER, AES, AET, AJB, AJC, AJD, and AJE are inactive with no supersedures (parts are no longer manufactured). |
| /4/ Code PE is inactive, superseded by DT. | /41/ Codes ABN and ABR are inactive with no supersedures. |
| /5/ Code JE is inactive, superseded by DT. | /42/ Codes OT, ZL, and AEX are inactive, see AKW and AZM. |
| /6/ Code PF is inactive, superseded by JH. | /43/ Codes JP, ZH, and AEY are inactive, see AKY, AZK, and AZL. |
| /7/ Code JF is inactive, superseded by DW. | /44/ Code MH is inactive, see codes PB and OA. |
| /8/ Code JJ is inactive, superseded by JH. | /45/ Code MJ is inactive, see codes NT and NV. |
| /9/ Code CJ is inactive, superseded by JZ. | /46/ Code EW is inactive, superseded by AA. |
| /10/ Code CK is inactive, superseded by WP. | /47/ Code ES is inactive, superseded by AC. |
| /11/ Code CF is inactive, superseded by KB. | /48/ Code EV is inactive, superseded by AB. |
| /12/ Code CH is inactive, superseded by WR. | /49/ Code ET is inactive, superseded by AE. |
| /13/ Codes DR, VN, ZF, and AEW are inactive, superseded by AKX. | /50/ Code HL is inactive, superseded by KV. |
| /14/ Codes OX, VO, and ZJ are inactive, see AKZ and AZN. | /51/ Code HM is inactive, superseded by KW. |
| /15/ Codes DK, VP, ZK, and AEW are inactive, superseded by AKV. | /52/ Code FS is inactive, superseded by KZ. |
| /16/ Codes OV, VX, and ZM are inactive, superseded by ALA. | /53/ Code FT is inactive, superseded by LC. |
| /17/ Code DL is inactive, superseded by VR. | /54/ Code HJ is inactive, superseded by LA. |
| /18/ Codes CM, CN, CO, FO, FX, FY, FZ and HA are inactive due to the inactivation for design of MS20450. Use codes VB and VC for MS16535 and MS16536 respectively. | /55/ Code HK is inactive, superseded by LD. |
| /19/ Code PK is inactive, superseded by RO. | /56/ Codes ASX & ATX were duplicated, superseded by ASS. |
| /20/ Code PR is inactive, superseded by RP. | /57/ Code AXX was duplicated, superseded by AVS. |
| /21/ Code PS is inactive, superseded by TP. | /58/ Code AVW was duplicated, superseded by ASR. |
| /22/ Code PT is inactive, superseded by RS. | /59/ Code AVF was duplicated, superseded by ATS. |
| /23/ Code PV is inactive, superseded by AAT. | /60/ Codes AXW and AVZ were duplicated, superseded by ATY. |
| /24/ Codes VZ and ZS are inactive, superseded by AAW. | /61/ Codes ASD, AVV & AXR were duplicated, superseded by ATL. |
| /25/ Codes WA and ZT are inactive, superseded by AAX. | /62/ Codes ASC, AVT & AXP were duplicated, superseded by ATM. |
| /26/ Code AAN is inactive, superseded by AAV. | /63/ Code AXS was a duplicate, superseded by ARE. |
| /27/ Code PD is inactive, superseded by RK. | /64/ Code AXT was a duplicate, superseded by ARD. |
| /28/ Code PW is inactive, superseded by RL. | /65/ Code ASV was originally assigned to NAS4450H, which will retain that code. BAR is now assigned to NAS1719H. |
| /29/ Code PX is inactive, superseded by TL. | /66/ Code ASW was originally assigned to NAS1424-1432, which will retain that code. BAS is now assigned to NAS1719KE. |
| /30/ Code PY is inactive, superseded by RN. | /67/ Code BCE was a duplicate, superseded by BAX. |
| /31/ Code PZ is inactive, superseded by AAO. | /68/ Code BCG was a duplicate, superseded by BAZ. |
| /32/ Codes WB and ZV are inactive, superseded by AAR. | |
| /33/ Codes WC and ZW are inactive, superseded by AAS. | |
| /34/ Code AAM is inactive, superseded by AAP. | |
| /35/ Codes AS and LK are inactive, superseded by LL. | |
| /36/ Code HH is inactive, superseded by LO. | |
| /37/ Code DF is inactive, superseded by LM. | |

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4.3 Supersedure (No New Code Assigned)

Superseding fastener not necessarily interchangeable may be selected from the referenced standard.

- /a/ M7885/2 superseded, see NAS9301B.
- /b/ M7885/3 superseded, see NAS9302B.
- /c/ M7885/4 superseded, see NAS9307M.
- /d/ M7885/5 superseded, see NAS9308M.
- /e/ M7885/6 superseded, see NAS9304B.
- /f/ M7885/7 superseded, see NAS9305B.
- /g/ M7885/8 superseded, see NAS9310M.
- /h/ M7885/9 superseded, see NAS9311M.

4.4 Reserved Codes

Codes XA thru XZ, TAA thru TZZ, VAA thru VZZ, WAA thru WZZ, XAA thru XZZ, YAA thru YZZ, and ZAA thru ZZZ are reserved for individual company use to identify company assigned fastener codes.

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5. ALPHABETICAL PART NUMBER LISTING

See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
*	1202	OB		Steel Cad Pld		Rivet, Blind, Pull-Thru, Protruding Head, Chobert
*	1204	NW		Steel		Rivet, Blind, Pull-Thru, 100° CSK Head Chobert
	7232	NZ		5056		Rivet, Blind, Pull-Thru, Flat Head, Chobert
	110674	AJK		Ti(CP55)		Rivet, Solid, 100° CSK Head
	110680	AJJ		Ti(CP55)		Rivet, Solid, Universal Head
	100-V	CD		5056-F		Rivet, Blind, "Keystone", 100° CSK Head
	10L509	MW	LC-C	Steel	2024-T4	Lockbolt, Tension, Self-Broaching, 100° CSK, CT Head, Pull Type
	10L509	MX	LC-R	Steel	Steel	Lockbolt, Tension, Self-Broaching, 100° CSK, CT Head, Pull Type
	10L509-EU	SK	LC-C	A286	2024-T4	Lockbolt, Tension, Self-Broaching, 100° CSK, CT Head, Pull Type
	10LP-EU	SJ	LC-C	A286	2024-T4	Lockbolt, Tension, Self-Broaching, Protruding Head, Pull Type
	10LP-T	MT	LC-C	Steel	2024-T4	Lockbolt, Tension, Self-Broaching, Protruding Head, Pull Type
	10LP-T	MV	LC-R	Steel	Steel	Lockbolt, Tension, Self-Broaching, Protruding Head, Pull Type
	11101ADJ4()	DC		2117-T3		Rivet, Flush, MS20426 Head, Jacketed
	2605V	AHM	2DC-M	Ti(6-4)	Nickel-Copper	Lockbolt, Shear, Protruding Head, Stump Type
	2705V	AHO	2DC-M	Ti(6-4)	Nickel-Copper	Lockbolt, Shear, 100° CSK Head, Stump Type
	2L426T	LT	LC-F5	Steel	6061-T6	Lockbolt, Tension, 100° CSK Head, Stump Type
	2LP-EU(10,12)	ABD	NAS1080P	A286	2024-T4	Lockbolt, Tension, Protruding Head, CT Shank, Pull Type
	2LP-EU(6,8)	ABC	NAS1080	A286	2024-T4	Lockbolt, Tension, Protruding Head, CT Shank, Pull Type
	2LPT	LS	LC-F5	Steel	6061-T6	Lockbolt, Tension, Protruding Head, Pull Type
	2LS426T	ZE	NAS1080	Steel	2024-T4	Lockbolt, Tension, 100° CSK Head, CT Shank, Stump Type
	44401ADJ4()	DE		2117-T3		Rivet, Protruding Head, MS20470, Jacketed
/40/	~~56S(-)100~~	~~FA~~		~~5056-F~~		~~Rivet, Blind, Explosive, 100° CSK Head~~
/40/	~~56S(-)A~~	~~FE~~		~~5056-F~~		~~Rivet, Blind, Explosive, Brazier Head~~
	6950-S	AV		CRES		Rivet, Blind, Mechanical Expanding, 100° CSK Head
	6951-S	AW		CRES		Rivet, Blind, Mechanical Expanding, Protruding Head
	7950-H-C	HS		CRES		Rivet, Blind, Mechanical Expanding, 100° CSK Head
	7951-H-C	HT		CRES		Rivet, Blind, Mechanical Expanding, Protruding Head
	860-015	FD		2117-T4		Rivet, Sealing, 100° CSK Head
	860-065	HV		5056-F		Rivet, Sealing, 100° CSK Head
	860-515	AWX		2117-T4		Rivet, Sealing, 100° CSK Head
	860-615	NM		2117-T4		Rivet, Sealing, 100° CSK Head
	860-660	NN		5056-F		Rivet, Sealing, 100° CSK Head
	9SP-100-A	EY		~~2117-T4~~		~~Rivet, Blind, Mechanical Expanding, 100° CSK Head~~

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See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
	9SP-100-R	VT		Steel Cad Plated		Rivet, Blind, Mechanical Expanding, 100° CSK Head
/2/	~~9SP-B-A~~	EX		~~2117-T4~~		~~Rivet, Blind, Mechanical Expanding, Protruding Head~~
	9SP-B-R	VS		Steel Cad Plated		Rivet, Blind, Mechanical Expanding, Protruding Head
/40/	~~A286(-)100~~	NL		~~A286~~		~~Rivet, Blind, Explosive, 100° CSK Head~~
	ACT509H-T	CR	LC-C	Steel	2024-T4	Lockbolt, 100° CSK CT Head
	ACT509H-T	DM	LC-R	Steel	Steel	Lockbolt, 100° CSK CT Head
	ACT509N-T	ED	LC-R	Steel	Steel	Lockbolt, 100° CSK CT Head
	ACT509W-T	CR	LC-C	Steel	2024-T4	Lockbolt, 100° CSK CT Head
*	AF007M	VW		Nickel-Copper		Rivet, 100° CSK Shear Head
*	AF007M()C	VV		Nickel-Copper Cad Pld		Rivet, 100° CSK Shear Head
	ALP426-T	WS	LC-C	Steel	2024-T4	Lockbolt, Tension, Pull Type MS20426 Head
	ALP509H-E	AM	LC-F	7075-T6	6061-T6	Lockbolt, 100° CSK Head
	ALP509H-T	AP	LC-C	Steel	2024-T4	Lockbolt, 100° CSK Head
	ALP509N-E	AM	LC-F	7075-T6	6061-T6	Lockbolt, 100° CSK Head
	ALP509N-T	AP	LC-C	Steel	2024-T4	Lockbolt, 100° CSK Head
	ALPPH-T	CT	LC-C	Steel	2024-T4	Lockbolt, Protruding Head
	ALPPH-T	EB	LC-R	Steel	Steel	Lockbolt, Protruding Head
	ALPPN-T	CT	LC-C	Steel	2024-T4	Lockbolt, Protruding Head
	ALPPN-T	EB	LC-R	Steel	Steel	Lockbolt, Protruding Head
	ALSF-T	DA	LC-C	Steel	2024-T4	Lockbolt, Stump Type, Protruding Head
	ALSF-T	EC	LC-R	Steel	Steel	Lockbolt, Stump Type, Protruding Head
/1/	~~AN427M-0~~	~~HW~~		~~Nickel-Copper~~		~~Rivet, 100° CSK Head, Cadmium Plated~~
	ASCT509-T	DB	LC-C	Steel	2024-T4	Lockbolt, Stump Type, 100° CSK CT Head
	ASCT509-T	EE	LC-R	Steel	Steel	Lockbolt, Stump Type, 100° CSK CT Head
	BB159	ME		5056-F		Bolt, Blind, 100° CSK Head
	BB160	MD		5056-F		Bolt, Blind, Protruding Head
	BB351	HE		CRES		Bolt, Blind, 100° CSK Head
	BB352	HD		CRES		Bolt, Blind, Protruding Head
	BB363	OW		302		Bolt, Blind, 100° CSK, Sealing Head
	BB371	YJ		431		Bolt, Blind, 100° CSK MS20426 Head
	BL	CC		Steel		Bolt, Blind, Protruding Head
	CCR264CS	AMT		A286		Rivet, Blind, 100° CSK Head, Non-Structural
	CCR264CS()IT	AXY		A286 Cad Pld		Rivet, Blind, 100° CSK Head, Non-Structural
	CCR264SS	AMC		Steel		Rivet, Blind, 100° CSK Head, Non-Structural
/40/*	~~CD-PN(-)100~~	HY		~~Nickel-Cad Pld~~		~~Rivet, Blind, Explosive, 100° CSK Head~~
/40/*	~~CD-PN(-)A~~	HZ		~~Nickel-Cad Pld~~		~~Rivet, Blind, Explosive, Brazier Head~~
	CR116	AX		2117-T4		Rivet, Blind, Pull-Thru, 100° CSK Head
	CR117	AY		2117-T4		Rivet, Blind, Pull-Thru, Protruding Head
	CR126	EL		5056-F		Rivet, Blind, Pull-Thru, 100° CSK Head
	CR127	EM		5056-F		Rivet, Blind, Pull-Thru, Protruding Head
*	CR156	ER		5056-F		Rivet, Blind, Mech Expanding, 100° CSK Head
*	CR157	EO		5056-F		Rivet, Blind, Mech Expanding, Protruding Head
*	CR162	EP		2117-T4		Rivet, Blind, Mech Expanding, 100° CSK Head
*	CR163	EN		2117-T4		Rivet, Blind, Mech Expanding, Protruding Head

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See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
	CR174	FF		2117-T4		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR175	FJ		2117-T4		Rivet, Blind, Mech Expanding, Protruding Head
	CR176	FH		2117-T4		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR178	AR		2117-T4		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR1984	EK		2117-T3		Rivet, Blind, Mech Expanding, Protruding Head
/20/	~~CR2162~~	~~PR~~		~~2017-T4~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, 100° CSK Head~~
	CR2162A	ASH		2017-T4		Rivet, Blind, 100° CSK Head, Locked Spindle (Chem Film Coating)
/28/	~~CR2163~~	~~PW~~		~~2017-T4~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, Universal Head~~
	CR2163A	ASJ		2017-T4		Rivet, Blind, Protruding Head, Locked Spindle (Chem Film Coating)
	CR2164	ADD		2017-T4		Rivet, Blind, Mech Expanding, Locked Spindle, NAS1097 Head
	CR2235	ACJ		5056-F		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, Unisink Head
/26/	~~CR2238~~	~~AAN~~		~~5056-F~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, 100° CSK Head~~
/34/	~~CR2239~~	~~AAM~~		~~5056-F~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, Universal Head~~
	CR2245	ACH		5056-F		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, Unisink Head
/23/	~~CR2218~~	~~PV~~		~~5056-F~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, 100° CSK Head~~
	CR2248NS	AAL		5056-F		Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, 100° CSK Head
/31/	~~CR2249~~	~~PZ~~		~~5056-F~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, Universal Head~~
	CR2249NS	AAK		5056-F		Rivet, Blind, Mech Expanding, Locked Spindle, Oversize Shank, Universal Head
	CR2251	AFB		5056-F		Rivet, Blind, Protruding Head, Locked Spindle, Bulbed, Short Stem
/19/	~~CR2262~~	~~PK~~		~~5056~~		~~Rivet, Blind, Self Plugging, 100° CSK Head~~
/27/	~~CR2263~~	~~PD~~		~~5056-F~~		~~Rivet, Blind, Structural, Pull Stem, Self Plugging, Protruding Head~~
	CR2264	ADC		5056-F		Rivet, Blind, Mech Expanding, Locked Spindle, NAS1097 Head
/24/	~~CR2538~~	~~ZS~~		~~Nickel-Copper~~		~~Rivet, Blind, Mech Expanding, Locked Nickel Alloy Spindle, 100° CSK Head~~
/25/	~~CR2538P~~	~~ZF~~		~~Nickel-Copper~~		~~Rivet, Blind, Mech Expanding, Locked Nickel Alloy Spindle, 100° CSK Head~~
/32/	~~CR2539~~	~~ZV~~		~~Nickel-Copper~~		~~Rivet, Blind, Mech Expanding, Locked Nickel Alloy Spindle, Protruding Head~~
/33/	~~CR2539P~~	~~ZW~~		~~Nickel-Copper~~		~~Rivet, Blind, Mech Expanding, Locked Nickel Alloy Spindle, Protruding Head~~
	CR2540	ADL		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, 156° CSK Head for Honeycomb
	CR2545	ADK		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, Unisink Head
/24/	~~CR2548~~	~~VZ~~		~~Nickel-Copper~~		~~Rivet, Blind, Mech Expanding, Locked Spindle, 100° CSK Head~~

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See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
/25/	CR2548P	WA		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, 100° CSK Head
/32/	CR2549	WB		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, Protruding Head
/33/	CR2549P	WG		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, Protruding Head
	CR2551	ACP		Nickel-Copper		Rivet, Blind, Protruding Head, Mechanically Locked Spindle, Bulbed, Short Stem
/21/	CR2562R	PS		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, 100° CSK Head, Silver Plated
/29/	CR2563R	PX		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, Universal Head, Silver Plated
	CR2564	ADE		Nickel-Copper		Rivet, Blind, Mech Expanding, Locked Spindle, NAS1097 Head
	CR2642	RJ		A286		Rivet, Blind, Mech Expanding, Locked Spindle (Hard), 100° CSK Head
	CR2643	RH		A286		Rivet, Blind, Mech Expanding, Locked Spindle (Hard), Protruding Head
	CR2653	ACY		A286		Rivet, Blind, Mech Expanding, Locked Spindle, Nickel Alloy Locking Collar, Universal Head
/22/	CR2662	PT		A286		Rivet, Blind, Mech Expanding, Locked Spindle (Hard), 100° CSK Head
/30/	CR2663	PY		A286		Rivet, Blind, Mech Expanding, Locked Spindle, Universal Head
	CR2664	ADF		A286		Rivet, Blind, Mech Expanding, Locked Spindle (Hard), NAS1097 Head
	CR2743	ACZ		Nickel Alloy X-750		Rivet, Blind, Mech Expanding, Locked Spindle, Universal Head
	CR2838	ADJ		Nickel Alloy 600		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, 100° CSK Head
	CR2839	ADB		Nickel Alloy 600		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, Universal Head
	CR2840	ADM		Nickel Alloy 600		Rivet, Blind, Mech Expanding, Locked Spindle, Bulbed, 156° CSK Head for Honeycomb
	CR2943	ADA		Ti(6-4)		Rivet, Blind, Mech Expanding, Locked Spindle, Universal Head
	CR2944	ADH		Ti(6-4)		Rivet, Blind, Mech Expanding, Locked Spindle, NAS1097 Head
	CR2A38	AJN		2219-T62		Rivet, Blind, Mech Expanding, 100° CSK Shear Head
	CR2A38A	APJ		2219-T62		Rivet, Blind, 100° Flush Head
	CR2A39	ALP		2219-T42		Rivet, Blind, Universal Head
	CR2A39A	APK		2219-T62		Rivet, Blind, Universal Head
	CR2A62	AKD		2219-T42		Rivet, Blind, 100° Flush Head
	CR2A62A	APL		2219-T62		Rivet, Blind, 100° Flush Head
	CR2A63	AKE		2219-T42		Rivet, Blind, Universal Head
	CR2A63A	APM		2219-T62		Rivet, Blind, Universal Head
	CR2A64	AKF		2219-T42		Rivet, Blind, 100° Flush Shear Head
	CR2A64A	APN		2219-T62		Rivet, Blind, 100° Flush Head
	CR317	FV		Steel		Rivet, Blind, Pull-Thru, Protruding Head
*	CR3212	ARM		5056		Rivet, Blind, 100° Flush Head, Nominal Dia, Bulb
*	CR3213	ARN		5056		Rivet, Blind, Universal Head, Nominal Dia, Bulb
	CR3214	ASK		5056 Sleeve/ 8740 Steel Stem	A286	Rivet, Blind, 100° Flush Shear Head

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See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
	CR3224	ATJ		5056		Rivet, Blind, 100° Flush Head
*	~~CR3242~~	~~ARD~~		~~5056~~		~~Rivet, Blind, 100° Flush Head, Bulb~~
*	~~CR3243~~	~~ARE~~		~~5056~~		~~Rivet, Blind, Universal Head, Bulb~~
	CR3245	ATK		5056		Rivet, Blind, Unisink Head, Locked Spindle
	CR3252	ARO		5056		Rivet, Blind, 100° Flush Head, Bulb
	CR3253	ARP		5056		Rivet, Blind, Universal Head, Bulb
*	~~CR3522~~	~~ATL~~		~~Nickel-Copper~~		~~Rivet, Blind, 100° Flush Head, Locked Spindle~~
*	~~CR3523~~	~~ASC~~		~~Nickel-Copper~~		~~Rivet, Blind, Universal Head, Positive Locked Spindle~~
/62/*	CR3523	ATM		Nickel-Copper		Rivet, Blind, Universal Head, Locked Spindle
	~~CR3524~~	~~ASD~~		~~Nickel-Copper~~		~~Rivet, Blind, 100° Flush Head, Positive Locked Spindle~~
*	~~CR3552~~	~~ARF~~		~~Nickel-Copper~~		~~Rivet, Blind, 100° Flush Head, Bulb~~
*	~~CR3553~~	~~ARG~~		~~Nickel-Copper~~		~~Rivet, Blind, Universal Head, Bulb~~
	CR516	BP		Nickel-Copper		Rivet, Blind, Pull-Thru, 100° CSK Head
	CR517	AK		Nickel-Copper		Rivet, Blind, Pull-Thru, Protruding Head
	CR562	BR		Nickel-Copper		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR563	AL		Nickel-Copper		Rivet, Blind, Mech Expanding, Protruding Head
	CR6624	JN		A286		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR6626	MP		A286		Rivet, Blind, Mech Expanding, 100° CSK Head
	CR6634	JL		A286		Rivet, Blind, Mech Expanding, Protruding Head
	CR6636	ML		A286		Rivet, Blind, Mech Expanding, Protruding Head
	CR762	SF		2017-T4		Rivet, Blind, High Clinch, 100° CSK Head
	CR763	PO		2017-T4		Rivet, Blind, High Clinch, Universal Head
	CR863	NE		Nickel-Copper		Rivet, Blind, High Clinch, Universal Head
	CR9163	AFK		2117-T4		Rivet, Blind, Mech Expanding, Protruding Head
	CSR902B	ANE		Ti/Cb		Rivet, 100° CSK Head, Bimetal
	CSR903B	AMY		Ti/Cb		Rivet, Universal Head
	CSR904B	AMX		Ti/Cb		Rivet, 100° CSK Head
	CSR912	AKC		Ti (6-4)		Rivet, 100° Flush Head, Solid
	CSR914	AJF		Ti (6-4)		Rivet, Solid, 100° CSK Head
	CSR915	AJH		Ti (6-4)		Rivet, Solid, Protruding Head
	CSR922	AMN		Ti (6-4)		Rivet, 100° CSK Head, Bimetal
	CSR924	AMO		Ti (6-4)		Rivet, 100° CSK Shear Head, Bimetal
	CSR924F	ARY		Ti (6-4)		Rivet, Solid, Bimetal, 100° Flush Head
	CSR925	AMP		Ti (6-4)		Rivet, Protruding Shear Head, Bimetal
	CSR925F	ARZ		Ti (6-4)		Rivet, Solid, Bimetal, Universal Head
	CSR945F	ASA		Ti (6-4)		Rivet, Solid, Bimetal, Universal Head
/40/	~~DR(-)100~~	~~EZ~~		~~2017-T4~~		~~Rivet, Blind, Explosive, 100° CSK Head~~
/40/	~~DR(-)A~~	~~FB~~		~~2017-T4~~		~~Rivet, Blind, Explosive, Brazier Head~~
/15/	F	DK		Steel		Bolt, Blind, 100° CSK
	F(-)A	JR		A286		Bolt, Blind, 100° CSK
/42/	~~F(-)ALS~~	~~OF~~		~~A286~~		~~Bolt, Blind, 100° CSK Long Stem~~
	F(-)ANS	ZZ		A286		Bolt, Blind, CSK Head, Jo-Bolt
/17/	FA	DL		7075-T6		Bolt, Blind, 100° CSK
/15/	FF	VP		Steel		Bolt, Blind, 100° CSK Head
/17/	FFA	VR		7075-T6		Bolt, Blind, 100° CSK Head, Millable Jo-Bolt
/15/	FL(-)	AEV		Steel		Bolt, Blind, 100° CSK Head, Self-Locking

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1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME
PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE.

FORM 12-01

See Sect. 4	Basic Part Number	Basic Code	Mating Nut or Collar/Washer	Shank Material	Collar/Washer or Nut Material	Description
/42/	FL(-)ALS	AEX		A286		Bolt, Blind, 100° CSK Head, Self-Locking
	H2605V	AEC	2DC-2AC5	Titanium	2219-T6	Lockbolt, Shear, Protruding Head, Stump Type, Ø5/32
	H2605V	AEE	6DC-EU5	Titanium	A286	Lockbolt, Shear, Protruding Head, Stump Type, Ø5/32
	H2705V	AEB	2DC-2AC	Titanium	2219-T6	Lockbolt, Shear, 100° Head, Stump Type, Ø5/32
	H2705V	AED	6DC-EU5	Titanium	A286	Lockbolt, Shear, 100° Head, Stump Type, Ø5/32
	HL10V	AAB	HL94U	Ti(6-4)	303	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	ABE	HL82	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	ADR	HW511D	Ti(6-4)	A286	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	AHC	HL570	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	AHD	SW1000	Ti(6-4)	A286	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	AMA	HL94DU	Ti(6-4)	303	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	NO	HL70	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	VF	HL79	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	YE	HL87	Ti(6-4)	303 Cad Pld	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL10V	ZX	HL175	Ti(6-4)	303	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL11	VH	HL79	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11	YH	HL70	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11	ZY	HL175	Ti(6-4)	303	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL112V	AOT	HL75V-()A HL75-()W	Ti(6-4)	303 17-4PH	Tension Bolt, Oversize, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL112V	AOV	HL97V	Ti(6-4)	A286	Tension Bolt, Oversize, Hi-Lok, Protruding Head, 1/16 Grip Variation
	HL113V	AOW	HL75V-()A HL75-()W	Ti(6-4)	303 17-4PH	Tension Bolt, Oversize, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL113V	AOX	HL97V	Ti(6-4)	A286	Tension Bolt, Oversize, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	AAC	HL94U	Ti(6-4)	303	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	ABH	HL82	Ti(6-4)	2024-T6	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	ADO	HW511D	Ti(6-4)	A286	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	AFZ	HL570	Ti(6-4)	Ti(6-4)	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	AHA	SW1000	Ti(6-4)	A286	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	AMB	HL94DU	Ti(6-4)	303	Shear Bolt, Hi-Lok, 100° CSK Head, 1/16 Grip Variation
	HL11V	APG	HL-75V()A HL75-()W	Ti(6-4)	303 17-4PH	Shear Bolt, Hi-Lok, Protruding Head, 1/16 Grip Variation

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