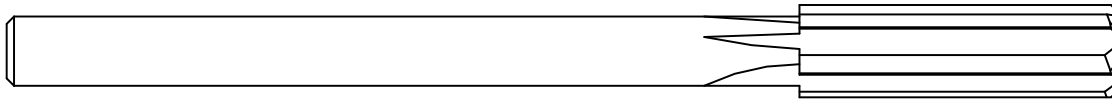


FED. SUPPLY CLASS

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REAMERS, CHUCKING, RIGHT-HAND CUT, 0.0938 THROUGH 1.5000 INCH

PART STANDARD



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PROCUREMENT SPECIFICATION NONE	TITLE REAMERS, CHUCKING, RIGHT-HAND CUT, 0.0938 THROUGH 1.5000 INCH	CLASSIFICATION PART STANDARD	NAS897 SHEET 1 OF 27

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1. INTRODUCTION

1.1 PURPOSE

This document provides the aerospace industry with a uniform standard for the procurement of chucking reamers. Utilization of the specified reamers in accordance with recommended applications will ensure the performance of a wide variety of reaming tasks with optimum quality, reliability, and economy.

1.2 SCOPE

Included in the standard are reamer design parameters, nomenclature, reamer geometry, suggested areas of application, acceptable materials, hardness requirements, and a Glossary of Terms defining reamer terminology. Unless otherwise noted, all dimensions are in inches.

2. TOOL FUNCTION

To enlarge the hole size, improve contour and surface finish of a previously produced hole.

3. PACKAGING INSTRUCTIONS

Reamers shall be individually packaged in cardboard or plastic containers, with both ends closed. Extra care shall be taken to prevent damage to carbide. Recyclable packaging materials are preferred.

Each package will contain the following information:

- Manufacturer's name or symbol
- Manufacturing lot number
- Reamer major diameter and pilot diameter (as applicable)
- Tool identification number

TABLE I – NAS897 REAMER TYPES

Standard Types
Type "A" HSS Chucking Reamer
Type "B" Cobalt HSS Chucking Reamer
Type "CS" Carbide Tipped Chucking Reamer (Short Tip)
Type "CL" Carbide Tipped Chucking Reamer (Long Tip)

See Table XV for specific applications for each type.

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4. TOOL NUMBERING SYSTEM

Standard: NAS897 - B - .3750 - S

Standard with Options: NAS897 - B - .3750 - S - .315 - 7B1 - 4.00 - 1.50 - .300

Specification: _____

Reamer Type: _____

- A = HSS (Type "A")
- B = Cobalt HSS (Type "B")
- CL = Long Carbide Tipped (Type "C")
- CS = Short Carbide Tipped (Type "C")

Diameter: _____

Helix: _____

- S = Straight
- L = Left Hand
- R = Right Hand

Pilot Diameter: _____

Shank Type: _____

- 1 = Straight Shank
- 2 = Straight Shank With Tri-Flats
- 3 = Quick Change Adapter
- 4 = Reduced Straight Shank
- 5 = Reduced Straight Shank With Tri-Flats
- 6 = Tang Shank
- 7 = Threaded Shank Adapter
- 7A1 = 1/4-28 Thread - Hex Flats
- 7A2 = 1/4-28 Thread - Round With Flats
- 7B1 = 5/16-24 Thread - Hex Flats
- 7B2 = 5/16-24 Thread - Round With Flats
- 7C1 = 3/8-24 Thread - Hex Flats
- 7C2 = 3/8-24 Thread - Round With Flats
- 7D1 = 7/16-20 Thread - Hex Flats
- 7D2 = 7/16-20 Thread - Round With Flats
- 7E1 = 9/16-18 Thread - Hex Flats
- 7E2 = 9/16-18 Thread - Round With Flats
- 7F1 = 5/8-18 Thread - Hex Flats
- 7F2 = 5/8-18 Thread - Round With Flats

Over All Length: _____

Flute Length: _____

Pilot Length: _____

Note: The Standard with Options example (using the options list above) is an NAS897 Type B, 3/8 inch reamer with pilot. If an option is not chosen, add a zero in that place within the part number.

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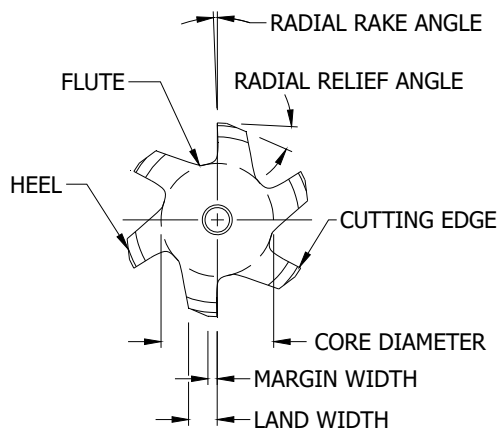
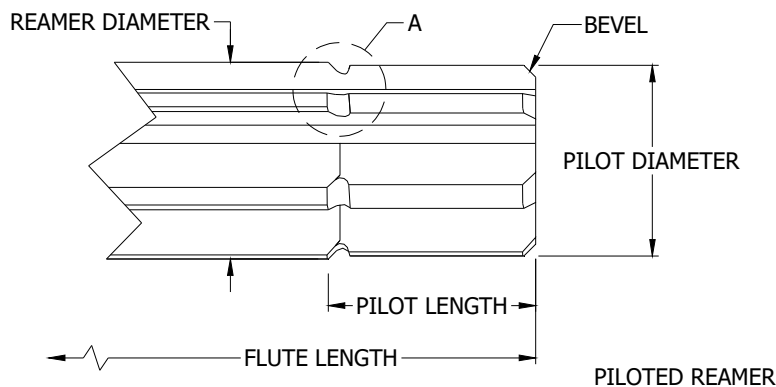
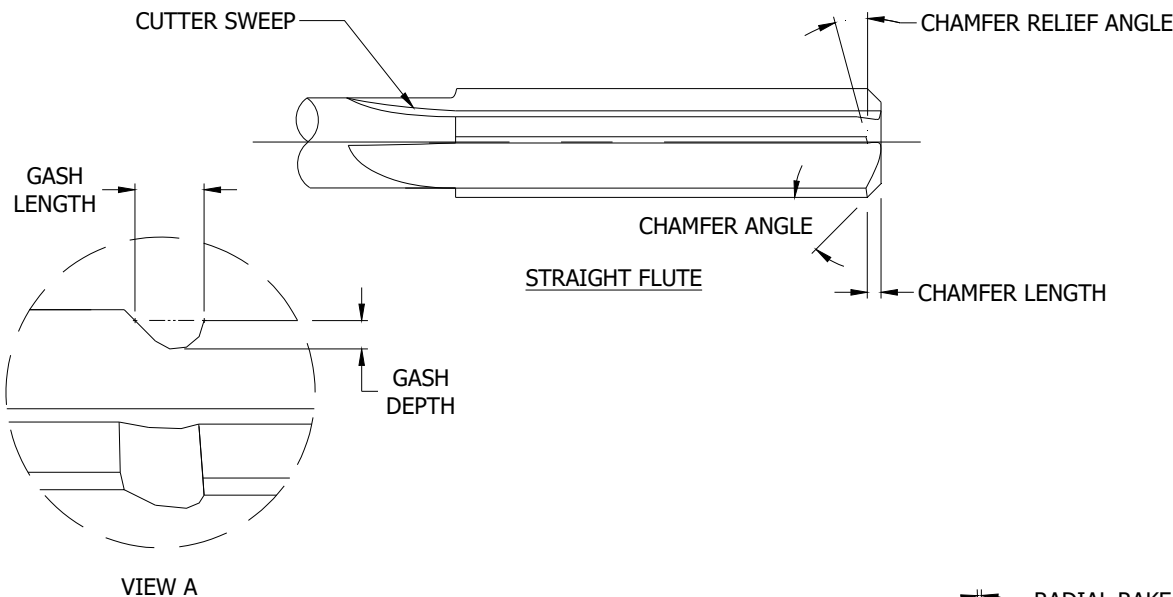
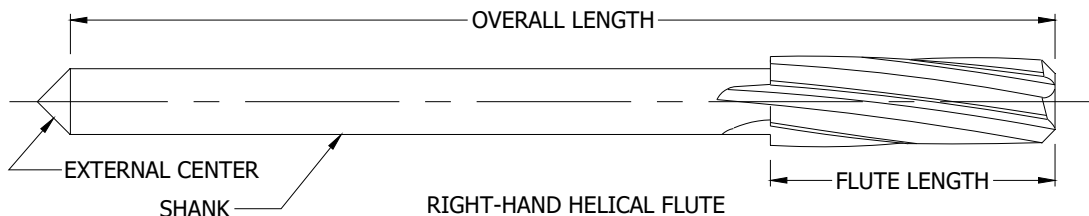
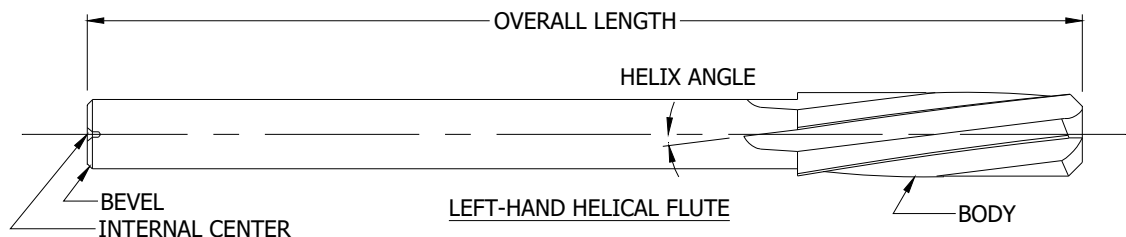
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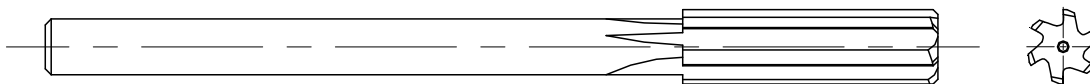
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5. REAMER NOMENCLATURE



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6. TYPE "A" HSS CHUCKING REAMER STRAIGHT OR HELICAL FLUTES DIAMETERS 0.0938 – 1.5000 INCHES



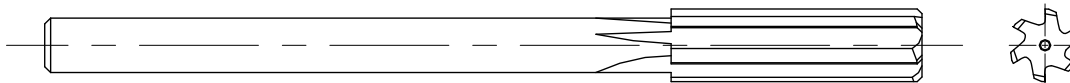
Type "A" available with pilot see Section 4 "Standard with Options" for ordering. Piloted type "A" replaced type "E".

TABLE II – TYPE "A" REAMER

Application	See Table XV.
Reamer Material	M-2 or M-7 HSS
Hardness	Flute length: 63 – 66 HRC From cutter sweep to within 1-1/2 inch from end of shank: 45 – 66 HRC 1 inch from end of shank: 30 HRC minimum
Surface Treatment	Bright finish standard. Other customer specified finish optional. Tools to have adequate protection from corrosion.
Identification	Manufacturer's symbol, reamer type, manufacturing lot number, and size to be marked with laser marking or steel stamping. Identification shall be permanent and legible (without magnification) on the tool shank for sizes 1/8 inch and larger. Sizes less than 1/8 inch to be marked on shank or packaging.

See Table XII for reamer sizes, overall and flute lengths, shank diameter, and number of flutes. See Table XIII for element dimensions and tolerances.

7. TYPE "B" COBALT HSS CHUCKING REAMER STRAIGHT OR HELICAL FLUTES DIAMETERS 0.0938 – 1.5000 INCHES



Type "B" available with pilot see Section 4 "Standard with options" for ordering.
Piloted type "B" replaced type "F".

TABLE III – TYPE "B" REAMER

Application	See Table XV.
Reamer Material	M33 or M42 cobalt HSS
Hardness	Flute length: 65 - 68 HRC From cutter sweep to within 1-1/2 inch from end of shank: 45 – 68 HRC 1 inch from end of shank: 30 HRC minimum
Surface Treatment	Bright finish standard. Other customer specified finish optional. Tools to have adequate protection from corrosion.
Identification	Manufacturer's symbol, reamer type, manufacturing lot number, and size to be marked with laser marking or steel stamping. Identification shall be permanent and legible (without magnification) on the tool shank for sizes 1/8 inch and larger. Sizes less than 1/8 inch to be marked on shank or packaging.

See Table XII for reamer sizes, overall and flute lengths, shank diameter, and number of flutes. See Table XIII for element dimensions and tolerances.

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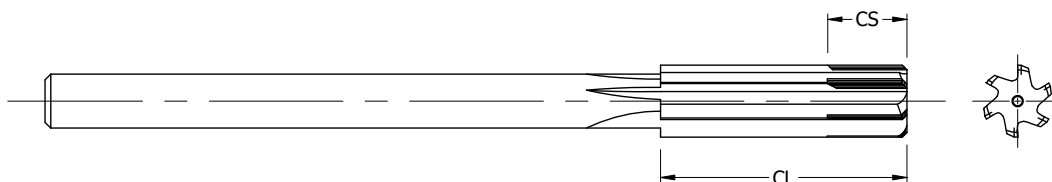
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8. TYPE "C" CARBIDE TIPPED CHUCKING REAMER STRAIGHT OR HELICAL FLUTES DIAMETERS 0.2500 – 1.5000 INCHES



Type "C" available with pilot for long tipped only. See Section 4 "Standard with Options" for ordering.

TABLE IV – TYPE "C" REAMER

Application	See Table XV.
Reamer Material	Reamer body: AISI 4000 or 8000 series or any HSS Carbide tip material: Tungsten carbide: 90 – 94% Cobalt = 6 - 10% Hardness = 91 – 93 HRA Porosity = A02 B00 C00 (per ASTM B276) No eta phase Less than 1% other carbides
Hardness	Body: 38 – 66 HRC Shank: For reamers up to 1/2 inch, 38 - 66 HRC to within 1-1/2 inch of end, last 1/2 inch 30 – 45 HRC
Surface Treatment	Bright finish standard. Other customers specified finish optional. Tools to have adequate protection from corrosion.
Identification	Manufacturer's symbol, reamer type, manufacturing lot number, and size to be marked with laser marking or steel stamping. Identification shall be permanent and legible (without magnification) on the tool shank.

TABLE V – CARBIDE TIP LENGTHS FOR TYPE "C" REAMERS

REAMER DIAMETER	CARBIDE SHORT TIPPED "CS"	CARBIDE LONG TIPPED "CL"
0.2500 - 0.3150	0.500	FULL FLUTE LENGTH
0.3151 - 0.7220	0.625	FULL FLUTE LENGTH
0.7221 - 1.0660	0.750	FULL FLUTE LENGTH
1.0661 - 1.5000	0.875	FULL FLUTE LENGTH

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