MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-149
Item to be Scouted	Carriage bolts, speed nuts, double wire hose clamps, & flange nuts.
Days to be scouted	5
Response Due By	05/12/2025
Description	12.5K per year of 1/4-20 UNC carriage bolt of length = 2.50" 12.5K per year of 1/4-20 UNC carriage bolt of length = 2.75" 900K per year of speed nut with hole diameter = 0.281" 25K per year of 1/4-20 UNC flange nut with serrated head (whiz-lock)

Section 2: Technical Information

Type of supplier being sought	Manufacturer
Reason	Re-shore
Describe the manufacturing processes (elaborate to provide as much detail as possible)	See attached technical drawings: - Carriage bolts: Cold heading + thread rolling + trimming = standard process for Grade 2 carriage bolts. - Speed Nuts: Steel preparation + blanking & stamping + forming & bending + Austempering + Finishing - Hose clamp: CNC wire forming + heat treatment tempering + surface finishing - Flange nuts: Cold forming + thread tapping + serration forming + heat treatment
Provide dimensions / size / tolerances / performance specifications for the item	See attached technical drawings for specific measurements and tolerances: - Carriage bolts: 1/4-20 UNC of 2 lengths: 2.50" and 2.75" - Speed Nuts: Hole diameter = 0.281" - Hose clamp: 2 diameters: 0.500" and 1.250" - Flange nuts: 1/4-20 UNC Grade 2 Whiz Lock
List required materials needed to make the product, including materials of product components	See attached technical drawings for specific measurements and tolerances: - Carriage bolts: Low/Medium Carbon Steel, Grade 2 - Speed Nuts: Spring steel, SAE J1085 or Music Wire ASTM A228 - Hose clamp: Spring steel wire, SAE J1085 or ASTM A228 - Flange nuts: Carbon steel, Grade 2 or ASTM Grade A
Are there applicable certification requirements?	Yes
Certification(s) required	DFARS
Details	Steel must be sourced, melted, and poured in the United States to comply with DFARS 252.225-7014 and to avoid tariff exposure. Certification of domestic origin required.
Are there applicable regulations?	Yes
Details	Must comply with DFARS 252.225-7014 (Preference for Domestic Specialty Metals) requiring steel to be melted and poured in the USA. Compliance required to avoid tariff exposure and maintain sourcing eligibility.
Are there any other stndards, requirements, etc.?	Yes
Details	Supplier must provide Mill Test Reports (MTRs) or Certificates of Origin confirming U.S.-sourced steel. First Article Inspection and full PPAP documentation expected, including: - DFMEA (Design Failure Mode Effects Analysis) - PFMEA (Process Failure Mode Effects Analysis) - Gage R&R (Repeatability & Reproducibility)

Additional Technical Comments	Delivery expected to Saltillo, Mexico and Marshalltown, Iowa. Volumes are annualized and consistent. Supplier must be capable of producing 6 total items across multiple diameters and finishes, using U.S.-origin steel only. McMaster or equivalent commercial parts are not acceptable because they don't use domestic steel.

Section 4: Business Information

Estimated potential business volume	12.5K per year of 1/4-20 UNC carriage bolt of length = 2.50" 12.5K per year of 1/4-20 UNC carriage bolt of length = 2.75" 900K per year of speed nut with hole diameter = 0.281" 12.5K per year of double wire hose clamp diameter 0.500" 12.5K per year of double wire hose clamp diameter 1.250" 25K per year of 1/4-20 UNC flange nut with serrated head (whiz-lock)
Estimated target price / unit cost information (if unavailable explain)	1/4-20 UNC carriage bolt of length (2.50") estimated cost per unit < $0.30 1/4-20 UNC carriage bolt of length (2.75") estimated cost per unit < $0.32 Speed nut (0.281" hole) estimated cost per unit < $0.08 Double wire hose clamp diameter 0.500" estimated cost per unit < $0.55 Double wire hose clamp diameter 1.250" estimated cost per unit < $0.65 1/4-20 UNC flange nut with serrated head (whiz-lock) estimated cost per unit < $0.22
When is it needed by?	ASAP
Describe packaging requirements	All items must be packaged to ensure safe transport, protection from corrosion or deformation, and ease of handling during receipt and inventory. The following packaging standards apply to all six items: - Bulk packaging is acceptable for fasteners and clamps as long as parts are not damaged during transit. - Packaging must prevent thread damage, rust, or wire deformation: - Use separators, bags, trays, or dividers as appropriate to keep parts from impacting each other. - Each container must be clearly labeled with: Part Number, Quantity, Supplier Name and Date of Packaging, Lot or Batch # - Use corrosion-inhibiting materials for parts with bare steel or light finishes. - All packaging must be suitable for stacking and safe warehouse storage.
Where will this item be shipped?	Delivery expected to Saltillo, Mexico and Marshalltown, Iowa.

Additional Comments

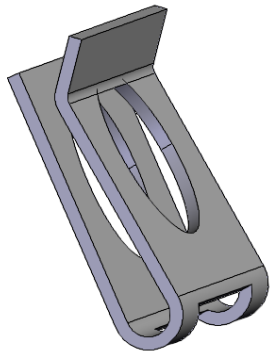
Is there other information you would like to include?	Please make sure to open and read all the technical details in the attached PDF document.

Physna

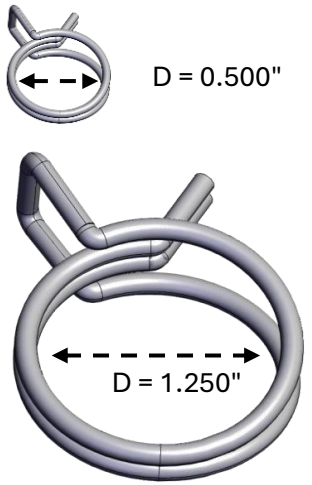
Can you manufacture these "4" items here in the US using US steel?

For delivery in Saltillo, Mexico and Marshalltown, Iowa.

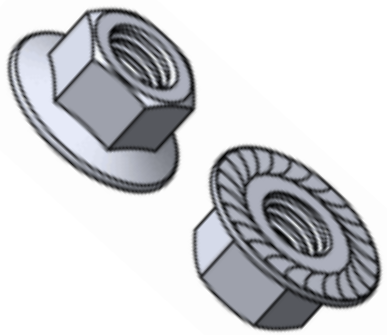
1/4 - 20 UNC Bolts
12.5K / year of 103100-01
12.5K / year of 103100-02



900K / year
Speed Nut
29K5501



Double Wire
Hose Clamp
12.5K / year of 101625-01
12.5K / year of 101625-02

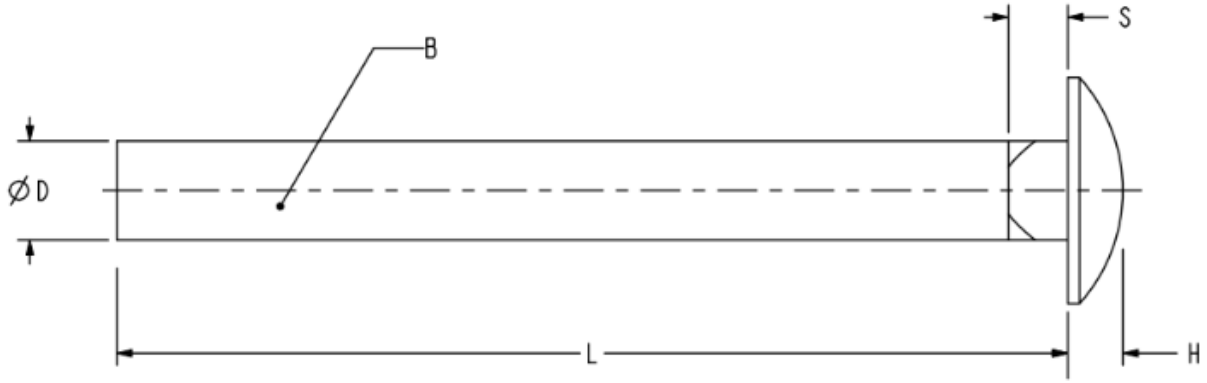


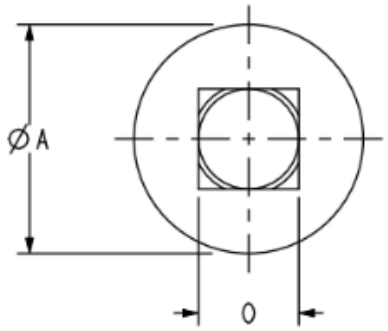
25K / year
1/4 - 20 UNC
Oversized Flange Nut
72H9701

PART NO	MATERIAL	BOLT STYLE	A HEAD DIA	B THRD SIZE	H HEIGHT OF HEAD	O SQUARE WIDTH	S SQUARE DEPTH	D BODY DIA	L LENGTH
103100-01	LOW/MED CARBON STL GRADE 2	ROUND HD SQ NECK	.594 .563	1/4-20 UNC	.145 .125	.260 .245	.156 .125	.260 .237	2.50
103100-02	LOW/MED CARBON STL GRADE 2	ROUND HD SQ NECK	.594 .563	1/4-20 UNC	.145 .125	.260 .245	.156 .125	.260 .237	2.75

DIMENSIONS IN THE TABLE ARE NOT DRIVEN BY THE CAD PART GEOMETRY

https://delta.physna.com/app/models/f908ad6d-fb6b-47be-84b5-69d42ba7621a





NOTES:
1. DIMENSIONAL SPEC TO BE PER ANSI B18.5.
2. FINISH -COATING CATEGORY AND CORROSION LEVEL B PER ES-0288.

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
X	906546	6-23-10	CTP	HP	ORIGINATED
1	909342	3/20/12	JJF		A) REMOVED MFR ACS AND MCMASTER-CARR (93548A553)
2	CN-012715	4-1-24	DAK	MR	A) ADDED PART# 103100-02 TO TABLE & UPDATED MODEL
3	CN-012814	05-13-24	DAK	MR	A) DELETED FINISH COLUMN FROM TABLE, ADDED NOTE 2

TOLERANCES UNLESS OTHERWISE NOTED:
2 PLACE ±.03
3 PLACE ±.005
ANGLES ±2°

TOLERANCES NONCUMULATIVE.
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.

THIRD ANGLE PROJECTION

DB REVISION 003

PURCHASE CODE	3	COMMODITY CODE	PC39-61

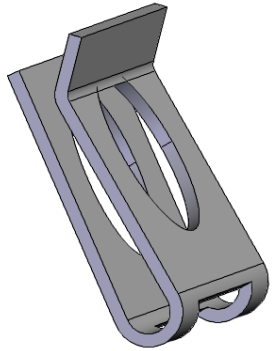
NOTICE: BY ACCEPTANCE OF PURCHASE ORDER, SUPPLIER AGREES TO NOTIFY PURCHASER OF ANY CHANGES IN DESIGN, MATERIAL, MANUFACTURING LOCATION, MANUFACTURING PROCEDURE OR SPECIFICATION, IN ADVANCE THEREOF.

DESCRIPTION: BOLT 1/4 - 20 CARRIAGE

FMEA NO.	SHEET NO.	DRAWING NO.
F00919	1 OF 1	103100-00

Head Type	Rounded
Rounded Head Style	Carriage
Rounded Head Profile	Wide
System of Measurement	Inch
Thread Direction	Right Hand
Thread Size	1/4"-20
Screw Size Decimal Equivalent	0.25"
Thread Type	UNC
Thread Fit	Class 2A
Length	2 3/4"
Threading	Fully Threaded
Thread Spacing	Coarse
Head	
Diameter	0.594"
Height	0.145"
Neck	
Type	Square
Width	0.26"
Length	0.16"
Fastener Strength Grade/Class	Grade 2
Material	Zinc-Plated Steel
Tensile Strength	60,000 psi
Hardness	Rockwell B70
Specifications Met	ASTM A307, SAE J429, ASME B18.5
RoHS	RoHS 3 (2015/863/EU) Compliant
REACH	Not Compliant
DFARS	Specialty Metals COTS-Exempt
Country of Origin	Peoples Republic of China or Taiwan
Schedule B	731815.2000
ECCN	EAR99

"This McMaster option would work if the steel was melted and poured in the USA."

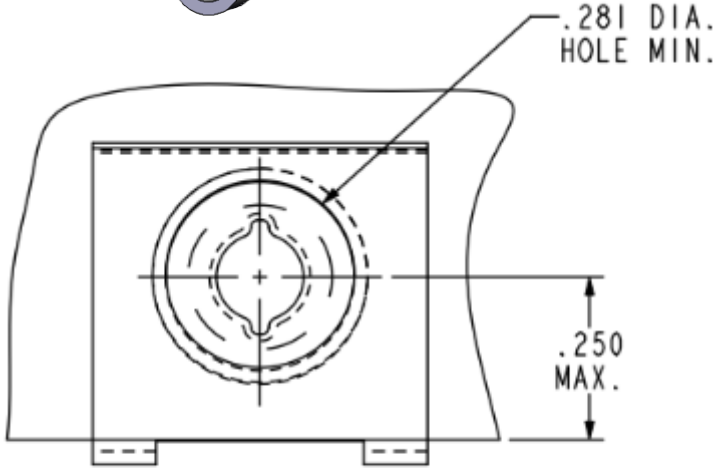


PART NO.	29K5501

https://delta.physna.com/app/models/f1b1be3b-1928-49c7-b721-062c0a1a72c4

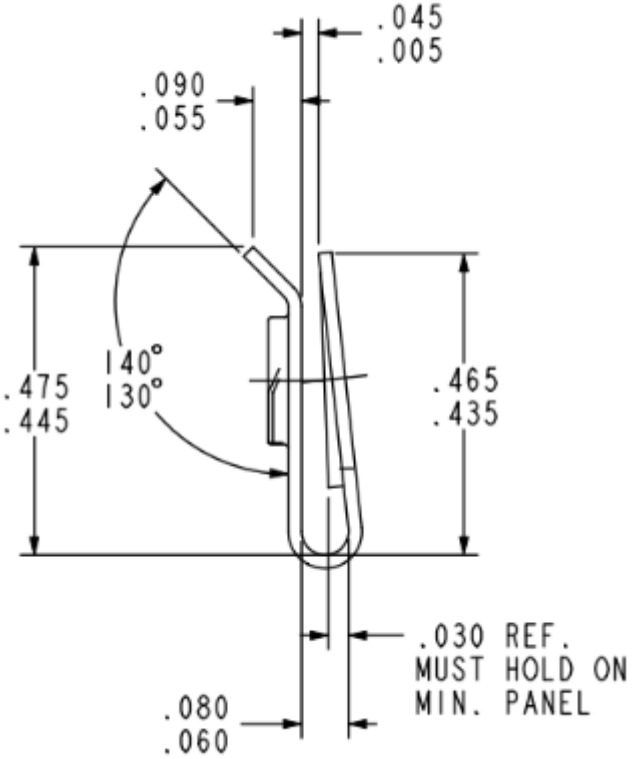
⬭ - THIS SYMBOL REPRESENTS A CRITICAL OR SIGNIFICANT ATTRIBUTE. A DOCUMENTED CONTROL PLAN IS REQUIRED FOR ALL ITEMS MARKED WITH THIS SYMBOL. REFER TO SPECIFICATION ES-0345.

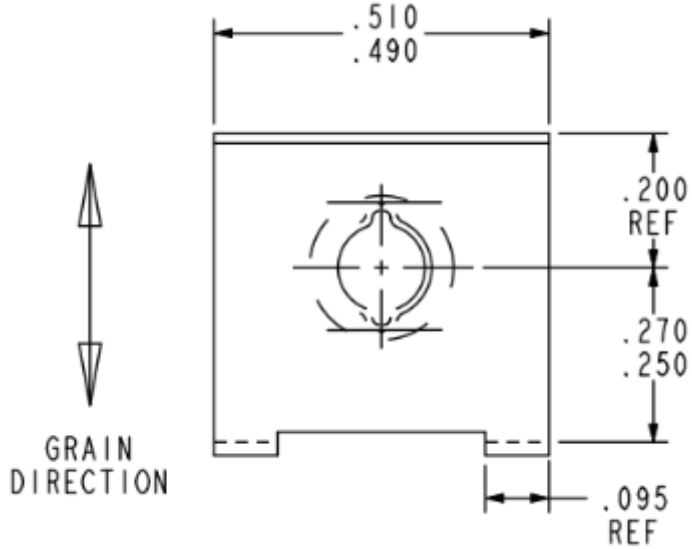
SPECIAL FEATURE: 10-24 MACHINE SCREW
MATERIAL: 0.020 THICK SAE 1050-1065 STEEL
HEAT TREAT: AUSTEMPER
CLASS OF FIT: FREE
HARDNESS: 43-49 RC
FINISH: COATING CATEGORY AND CORROSION LEVEL B PER ES-0288. [Se]



DETAIL 'A'

RECOMMENDED
HOLE LAYOUT IN
.0360-.050 PANEL





REV	EC NO.	DATE	BY	APVD	REVISION NOTE
X		10-26-03	SANT		ORIGINATED AT PD&R
5	E704107	04/18/07	JSS		A) CHANGED DIMS: FROM .065/.035 TO .045/.005, FROM .125/.095 TO .090/.055, FROM .470/.440 TO .475/.445, FROM 110/90° TO 140/130°, FROM .240 REF TO .030 REF, FROM .074/.054 TO .080/.060 FROM 44-51 RC TO 43-49 RC. B) REMOVED MANUFACTURER AND MFR'S NO.
6	CN-012202	9-11-23	PSS	WP	A- FINISH WAS "PHOSPHATE AND OIL". B- UPDATED TO A NEWER FORMAT.

DB REVISION 006

TOLERANCES UNLESS OTHERWISE NOTED:
2 PLACE ±.03
3 PLACE ±.005
ANGLES ±2°

TOLERANCES NONCUMULATIVE.
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.
DRAWING IS THE PROPERTY OF LII WWHC ENGINEERING.

THIRD ANGLE PROJECTION

PURCHASE CODE	3	COMMODITY CODE	GM

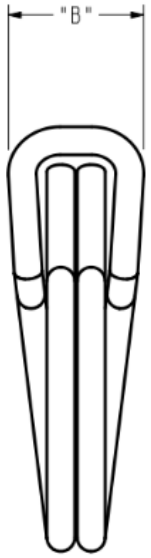
NOTICE: BY ACCEPTANCE OF PURCHASE ORDER, SUPPLIER AGREES TO NOTIFY PURCHASER OF ANY CHANGES IN DESIGN, MATERIAL, MANUFACTURING LOCATION, MANUFACTURING PROCEDURE OR SPECIFICATION, IN ADVANCE THEREOF.

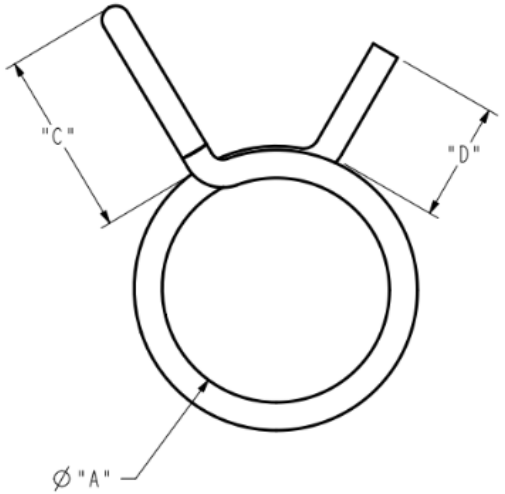
DESCRIPTION: CLIP

FMEA NO.	SHEET NO. 1 OF 1	DRAWING NO. 29K5501

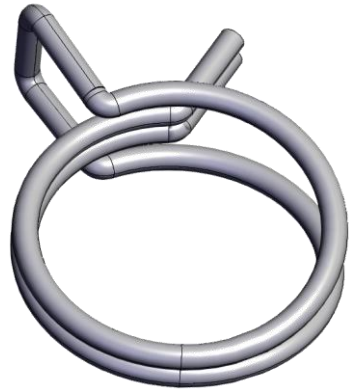
PART NO.	101625-01	101625-02
MANUFACTURER	ROTOR CLAMP	ROTOR CLAMP
MFR'S PART NUMBER	DW-8	DW-20
MFR'S LOCATION (CITY/STATE/COUNTRY)	SOMERSET, NJ, USA	SOMERSET, NJ, USA
MANUFACTURER		PETERSON SPRING
MFR'S PART NUMBER		CP20
MFR'S LOCATION (CITY/STATE/COUNTRY)		THREE RIVERS, MI, USA
DIM "A" CLAMPING RANGE	.490 MINIMUM [SE] .500 NOMINAL .510 MAXIMUM	1.219 MINIMUM [SE] 1.250 NOMINAL 1.280 MAXIMUM
DIM "B"	.280 REF	.480 REF
DIM "C"	.380 MAX REF	.660 MAX REF
DIM "D"	.250 MIN	.450 MIN
DIM "E"	.462	1.145
DIM "F"	.006	.010
MATERIAL	.059±.001 DIA [SE] SPRING STEEL WIRE, S.A.E. 1065-1085	.110±.001 DIA SPRING STEEL WIRE, S.A.E. 1065-1085 OR MUSIC WIRE, ASTM A228 [SE]

DIMENSIONS IN THE TABLE ARE NOT DRIVEN BY THE CAD PART GEOMETRY





https://delta.physna.com/app/models/1958166b-58e4-46b9-9b92-fbd56164e137



⬭ - THIS SYMBOL REPRESENTS A CRITICAL OR SIGNIFICANT ATTRIBUTE. A DOCUMENTED CONTROL PLAN IS REQUIRED FOR ALL ITEMS MARKED WITH THIS SYMBOL. REFER TO ES-0345.

DB REVISION 005

NOTES:
1. MATERIAL: SEE TABLE
2. HARNESS: HEAT TREATED TO MINIMUM 50 RC
3. FINISH: GEOMET 321 (360 HRS ASTM B117)

DEFINITION OF CLAMPING RANGE:
AFTER EXPANDING TO NO GREATER THAN THE MAX DIAMETER SPECIFIED, THE CLAMP IN THE RELAXED POSITION SHALL NOT PASS OVER A DIM "E" GAGE. WHEN CLAMP IS THEN ASSEMBLED ON A MINIMUM DIAMETER GAGE, A WIRE OF DIM "F" DIAMETER SHALL NOT PASS BETWEEN THE GAGE AND THE CLAMP WHEN INSERTED IN A DIRECTION PARALLEL TO THE AXIS OF THE GAGE.

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
X	E704278	10/01/07	JJF		ORIGINATED AT LENNOX PDR
1	E704323	11/15/07	JJF		A) CHANGED MFR'S P/N FROM DW-8.5 TO DW-8 B) CHANGED CLAMP RANGE DIMS FROM .524/.539/.555 TO .490/.500/.510 C) CHANGED CLAMP RANGE NOTE FROM "... .484"..." TO "... .462"..." D) ADDED MFR'S LOCATION
2	908629	2/24/12	JJF		A) ADDED 101625-02 AND TABULATED DIMENSIONS
3	909393	4/19/12	JJF		A) CHANGED FINISH FROM "ZINC PLATE MINIMUM .0002 PLUS DICHROMATE TREATMENT" TO "DACROMET - YELLOW (360 HRS ASTM B117, ROHS COMPLIANT)"
4	908629C	8/01/12	JJF	GWK	A) ADDED "OR MUSIC WIRE ASTM A228" TO -02 MAT'L B) CHANGED FINISH FROM "YELLOW (360 HRS ASTM B117, ROHS COMPLIANT)" TO "YELLOW OR RED (360 HRS ASTM B117)"
5	CN-000908	1/30/14	JJF	MAN	A) CHANGED FINISH FROM "DACROMET - YELLOW OR RED" TO "GEOMET 321"

TOLERANCES UNLESS OTHERWISE NOTED:
2 PLACE ±.03
3 PLACE ±.005
ANGLES ±2°

TOLERANCES NONCUMULATIVE. DIMENSIONS ARE IN INCHES. DO NOT SCALE DRAWING. DRAWING IS THE PROPERTY OF LII WWHC ENGINEERING.

THIRD ANGLE PROJECTION

PURCHASE CODE	2	COMMODITY CODE	PC39-225

NOTICE: BY ACCEPTANCE OF PURCHASE ORDER, SUPPLIER AGREES TO NOTIFY PURCHASER OF ANY CHANGES IN DESIGN, MATERIAL, MANUFACTURING LOCATION, MANUFACTURING PROCEDURE OR SPECIFICATION, IN ADVANCE THEREOF.

DESCRIPTION: CLAMP HOSE

FMEA NO.	SHEET NO.	DRAWING NO.
F00323	1 OF 1	101625-00

PART NUMBER: 72h9701 ECN: E703712 REVISION: 2.0 RELEASE DATE: 04/15/2008

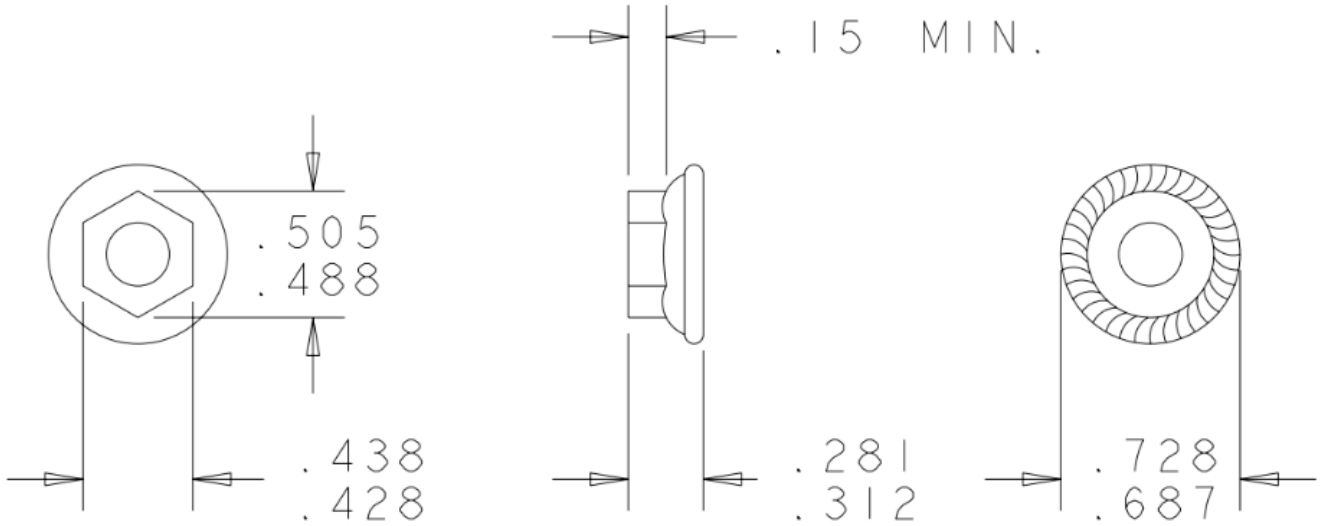
ATTRIBUTE	MODEL NAME
MANUFACTURER	
MFR'S PART NUMBER	
MFR'S LOCATION (CITY/STATE/COUNTRY)	

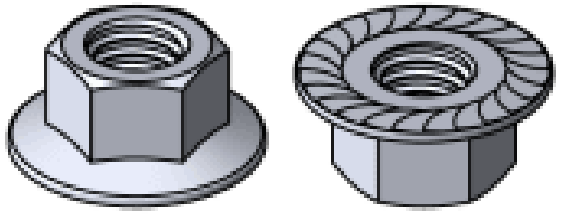
1/4-20 FLANGE NUT WITH SERRATED HEAD.(WHIZ-LOCK)

FINISH: ES-0288 PER PARAGRAPH 2.1

MATERIAL: CARBON STEEL-SAE GRADE 2 OR ASTM GRADE A

THREADS SHALL COMFORM TO UNC CLASS 2B





Reference: https://boltdepot.com/Product-Details?product=17627

REV	EC NO.	DATE	BY	APVD	REVISION NOTE
X	M-1575	5-8-91	BDJ		ORIGINATED AT PD & R
2	E703712	2-20-07	DAO		A) CONVERTED TO PRO-E & REVISED THE FORMAT.

TOLERANCES UNLESS OTHERWISE NOTED:
2 PLACE ±.03
3 PLACE ±.005
ANGLES ±2°

TOLERANCES NONCUMULATIVE.
DIMENSIONS ARE IN INCHES.
DO NOT SCALE DRAWING.
DRAWING IS THE PROPERTY OF LII WWHC ENGINEERING.

THIRD ANGLE PROJECTION

DIR NUMBER			DIR VERSION
PURCHASE CODE	3	COMMODITY CODE	GK

NOTICE: BY ACCEPTANCE OF PURCHASE ORDER, SUPPLIER AGREES TO NOTIFY PURCHASER OF ANY CHANGES IN DESIGN, MATERIAL, MANUFACTURING LOCATION, MANUFACTURING PROCEDURE OR SPECIFICATION, IN ADVANCE THEREOF.

DESCRIPTION: NUT (1/4-20)

FMEA NO.	SHEET NO. 1 OF 1	DRAWING NO. 72H9701

Physna

Can you manufacture these 4 items here in the US using US steel?

04-16-2025

- **How many of each do you need?** Annual usage of the bolt and nut is about 25K.
  Note: 2 bolts of diff lengths. 12.5K of each.
  The speed nut (29K5501) is about 900K.
  No details on the double wire hose clamp. Assume 12.5K per year of each.

- **By when? (and will this be a cyclical purchase?)** As soon as possible to start.
  Yes, it would be used consistently.

- **Do you need a first article?** Most likely, yes. Full PPAP (Production Part Approval Process).
  Details on the development process can be negotiated.

- **What certifications must the manufacturer have?** The only requirement: the metal poured in the USA

- **What proof of provenance is required?** Certification from the metal source. They will be familiar with this.

Physna's example of a PPAP (Production Part Approval Process) agreement

Production Part Approval Process (PPAP) Package

Project: Annual Supply of Nuts & Bolts (25,000 sets / year)

Supplier (Manufacturer): _____

Small-Business Entity, USA

Customer: _____

Company / Program Name

Part Numbers Covered:

- Nut PN: _____
- Bolt PN: _____

Revision / Date: Rev A — ___ / ___ / 20__

1 Part Submission Warrant (PSW)

Field	Entry
Submission Level	☐ Level 1 ☐ Level 2 ☑ Level 3 (default)
Reason for Submission	☐ Initial Release ☐ Engineering Change ☐ Annual Re-qualification ☐ Other: _____
Engineering Revision Level	_____
Annual Production Quantity	25,000 sets
Material Specification	*100 % U.S.-sourced, melted & poured steel conforming to the attached Technical Specification TS-###*
Special Characteristics	_____
Requested Ship Date	_____

Supplier Declaration

"We certify that the samples represented by this warrant are manufactured using documented processes and controls, that all supporting data are accurate and complete, and that production will continue to meet all drawing, specification, and purchase-order requirements, including the U.S.-melt steel requirement."

Supplier Representative	Title	Signature	Date

Customer Approval

The customer authorizes shipment and release for production quantities based on this PPAP package.

Customer Representative	Title	Signature	Date

Physna's example of a PPAP (Production Part Approval Process) agreement

2 Design Record

Attach latest controlled drawing(s) and Technical Specification TS-### describing all dimensional, material, and performance requirements.

3 Engineering Change Documents

☐ N/A ☐ See attached ECO ____ dated ____.

4 Customer Engineering Approval

☐ Pending ☐ Approval memo attached.

5 Design FMEA (DFMEA)

Attach DFMEA summary (recommended risk priority ≤ 100 for all failure modes).

6 Process Flow Diagram

Attach visual map from receiving through packaging & shipping.

7 Process FMEA (PFMEA)

Attach PFMEA; include controls for material certification (U.S. melt verification), thread rolling, heat-treat, plating, and final verification.

DFMEA = Design Failure Mode & Effects Analysis
PFMEA = Process/Potential Failure Mode & Effects Analysis

8 Control Plan (Initial Production)

Key checkpoints to assure compliance:

1. **Material Certification Review** – 100 % lot verification of domestic melt certificates (DFARS 252.225-7014 compliant).
2. **Incoming Steel Chemistry & Hardness** – Lot basis.
3. **Thread Pitch / Major Ø / Minor Ø** – 125 pcs per lot.
4. **Mechanical Properties (Proof Load, Tensile)** – Quarterly or on change.
5. **Surface Finish / Coating Thickness** – 8 pcs per lot.
6. **Final Visual & Packaging** – 100 %.

9 Measurement System Analysis (MSA)

GR&R study results attached; %GR&R < 10 % for key gages.

Gage Repeatability and Reproducibility

10 Dimensional Results (First Article)

Table of 10 critical dimensions measured on 5 pieces each — *results attached.*

11 Material / Performance Test Results

- Certified Mill Test Reports (CMTR) proving U.S. melt & pour.
- Mechanical test summary: UTS, yield, hardness, proof load — *see Report MT-____.*

12 Initial Process Studies

Capability study (Cpk/Ppk) on thread pitch & tensile strength ≥ 1.67; graphs attached.

Physna's example of a PPAP (Production Part Approval Process) agreement

13 Qualified Laboratory Documentation

Copies of ISO 17025 accreditation for outside test labs.

14 Appearance Approval Report

☐ N/A (functional hardware part).

15 Sample Production Parts

3 labeled parts supplied with this submission.

16 Master Sample & Checking Aids

Stored at supplier; identification tag #: _____.

Record Retention & Change Control

The supplier shall retain all PPAP records for **minimum 15 years** and notify the customer of **any process, material, or source change** prior to implementation.

Contacts

Role	Company	Name	Email	Phone
PPAP Coordinator	Supplier			
Quality Manager	Supplier			
Buyer / SQE	Customer			
Senior Quality Engineer				

> **Note:** All future deliveries must be accompanied by lot-specific Material Certificates verifying compliance with the U.S. melt requirement and citing the Technical Specification TS-### revision in effect.

End of PPAP Package – Attachments follow

https://docs.google.com/document/d/1ZYqMH_wz_t4r9PA5USihERJvcTS4NZPFz4QCdPaTA5c