



Part Submission Warrant

Part Name

Eyelet Terminal - Loose Parts

Cust. Part Number

MUST-14463-DB

Shown On Drawing No.

MUST-14463-DB

Org. Part Number

MUST-14463-DB

Engineering Change Level

B2

Dated

9/11/2018

Additional Engineering Changes

N/A

Dated

Safety and/or Government Regulation

☐ Yes

☒ No

PURCHASE ORDER

N/A

Weight (kg)

0.0088

Checking Aid No.

N/A

Checking Aid Engineering Change Level

N/A

Dated

ORGANIZATION MANUFACTURING INFORMATION

Royal Power Solutions (118532649)

CUSTOMER SUBMITTAL INFORMATION

NURSAN OTOMOTIV EOOD

Supplier Name & Supplier/Vendor Code

125 Mercedes Drive

Customer Name/Division

AKBAS, Gulcin

Street Address

Carol Stream

IL

60188

USA

Buyer/Buyer Code

Automotive/ Various

City

Region

Postal Code

Country

Application

MATERIALS REPORTING

Has customer-required Substances of Concern information been reported?

☒ Yes

☐ No

Submitted By

IMDS or other customerFormat:

1271257646 / 1

Are polymeric parts identified with appropriate ISO marking codes?

☐ Yes

☐ No

☒ n/a

REASON FOR SUBMISSION

☐ Initial Submission

☐ Engineering Change(s)

☐ Tooling: Transfer, Replacement, Refurbishment, or additional

☐ Correction of Disprepancy

☐ Tooling Inactive less than 1 year

☐ Change to Optional Construction or Material

☐ Supplier or Material Source Change

☐ Change in Part Processing

☐ Parts Produced at Additional Location

☐ Annual Submission

☒ Other - please specify below

PPAP required to add TK, Wieland and Tianshen to the supply chain.

REQUESTED SUBMISSION LEVEL

☐ Level 1 - Warrant only (and for designated appearance items, and Appearance Approval Report) submitted to customer.

☐ Level 2 - Warrant with product samples and limited supporting data submitted to customer.

☐ Level 3 - Warrant with product samples and complete supporting data submitted to customer.

☒ Level 4 - Warrant and other requirements as defined by customer.

☐ Level 5 - Warrant and product samples and complete supporting data reviewed at supplier's manufacturing location.

Submission Results

The results for

☒ Dimensional Measurements

☒ Material and Functional Tests

☐ appearance criteria

☐ Statistical Process Package

These results meet all design record requirements

☒ Yes

☐ No

(If "NO" - Explanation Required)

Mold/Cavity/Production Process

Stamping

DECLARATION

I affirm that the samples represented by this warrant are representative of our parts which were made by a process that meets all Production Part Approval Process Manual 4th Edition Requirements. I further affirm that these samples were produced at the production rate of 57600.00 / 8 hours. I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.

Explanation/Comments

PPAP required to add TK, Wieland and Tianshen to the supply chain.

Is each Customer Tool properly tagged and numbered?

☐ Yes

☐ No

☒ N/A

Organization Authorized Signature

Ribota, Lidia

Date

12/13/2024

Print Name

Ribota, Lidia

Phone No.

847-873-3662

Fax No.

Title

Quality Analyst

E-mail

LRibota@royaldie.com

FOR CUSTOMER USE ONLY

Submittal Disposition

☐ Pending

☐ PPAP Approved

☐ Rejected

☐ Other

☐ PPAP Required

☐ Interim

☐ Expired

☐ Cancelled

Customer Signature

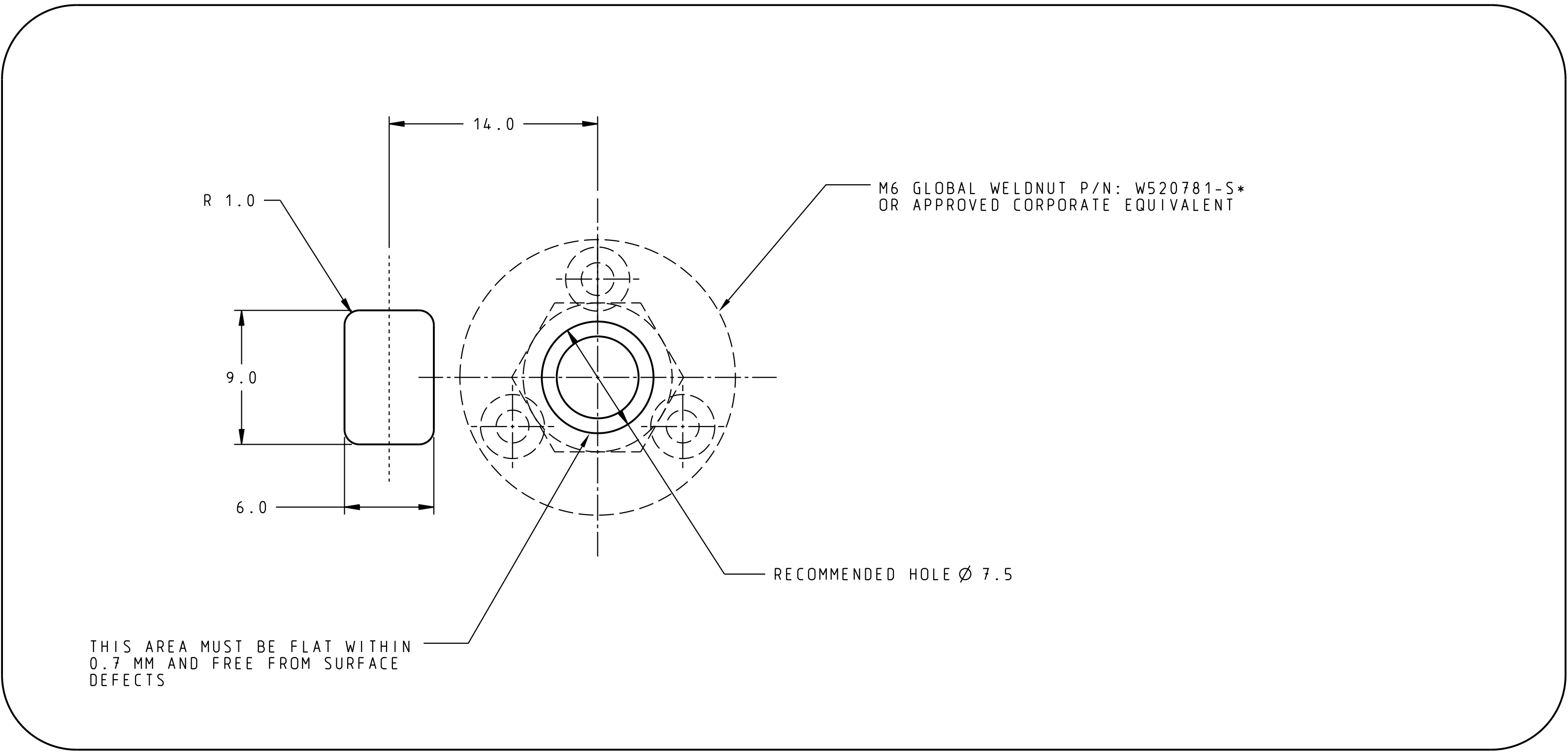
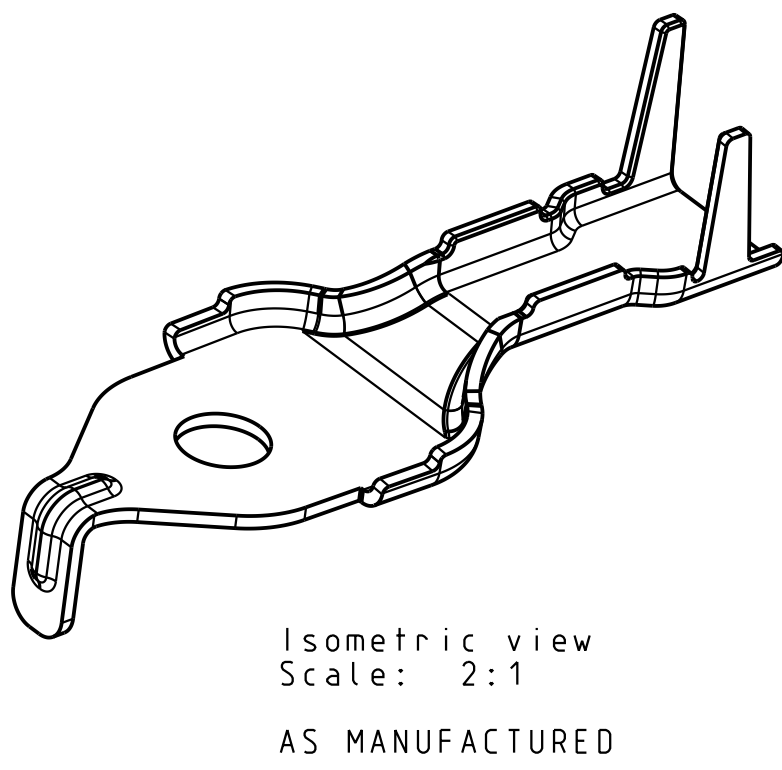
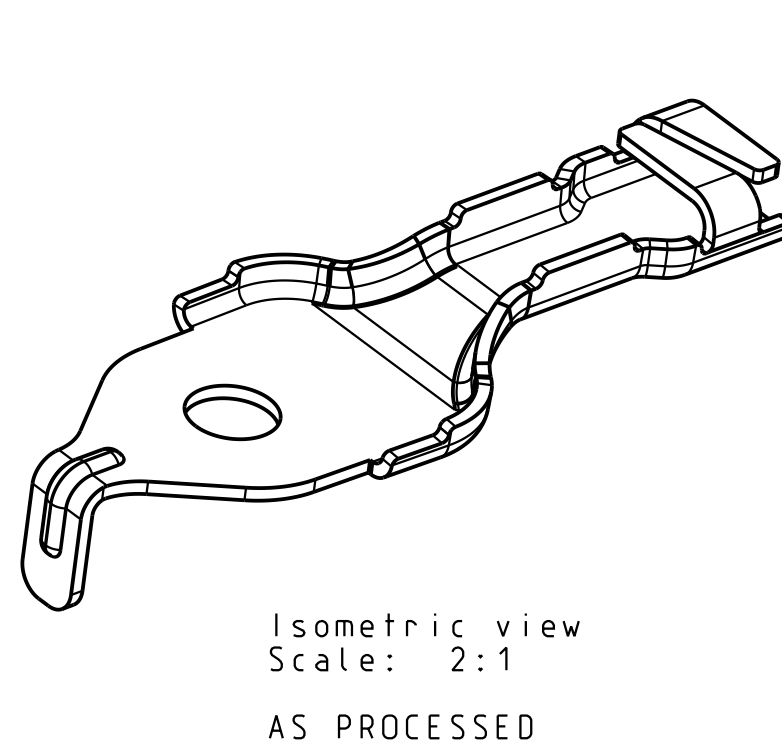
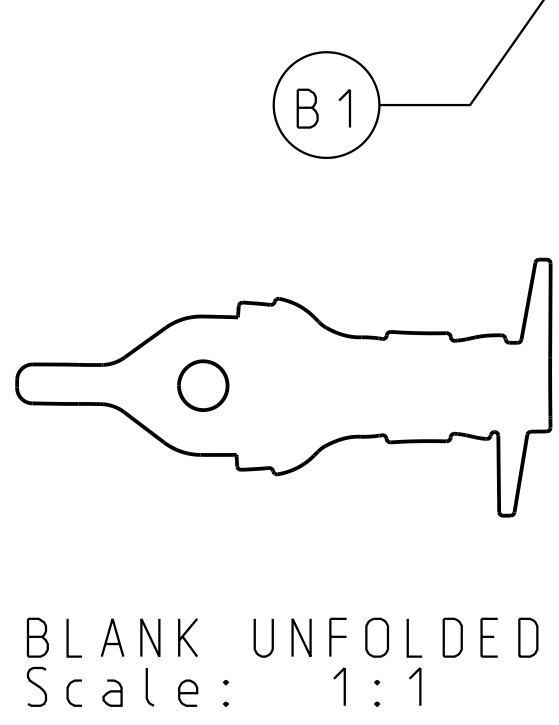
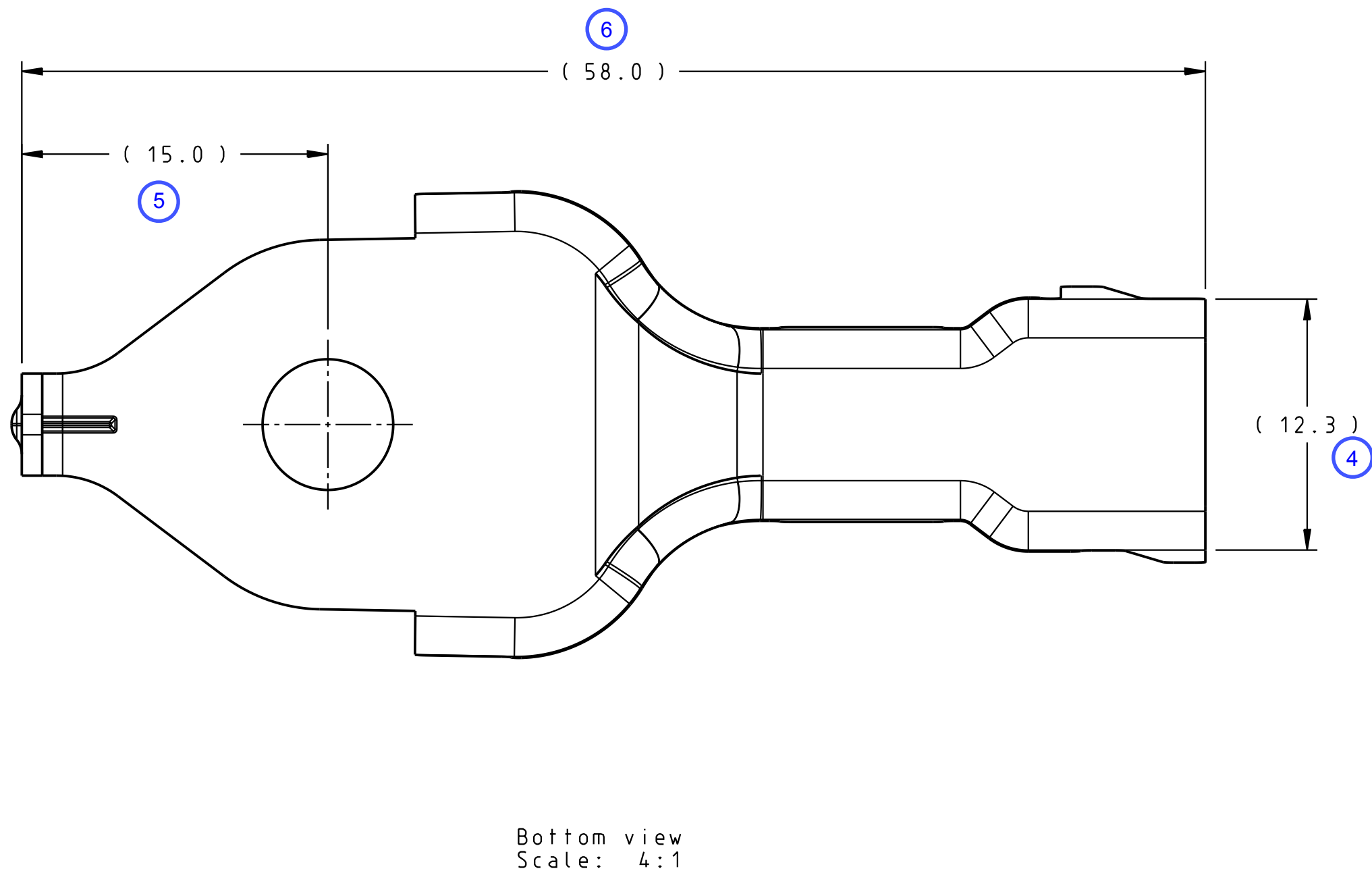
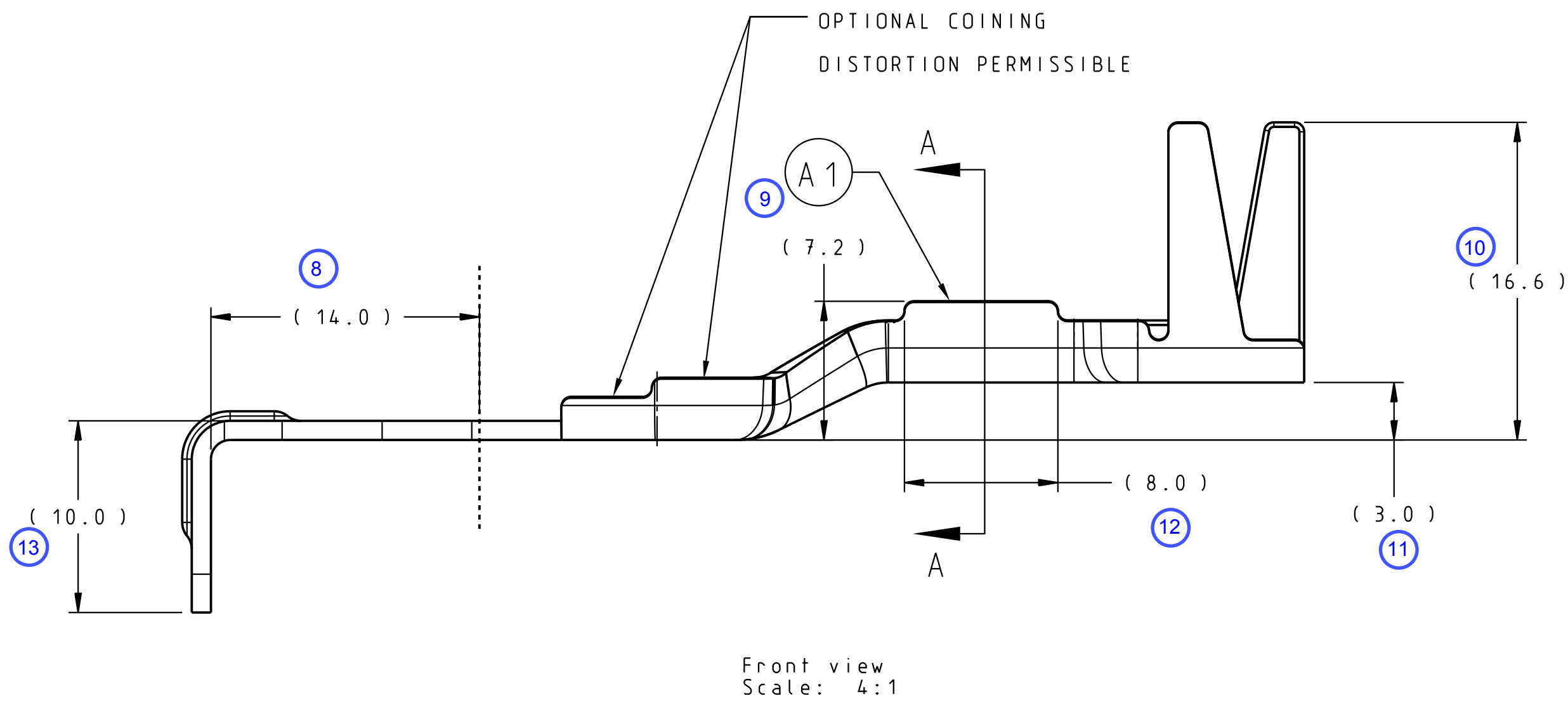
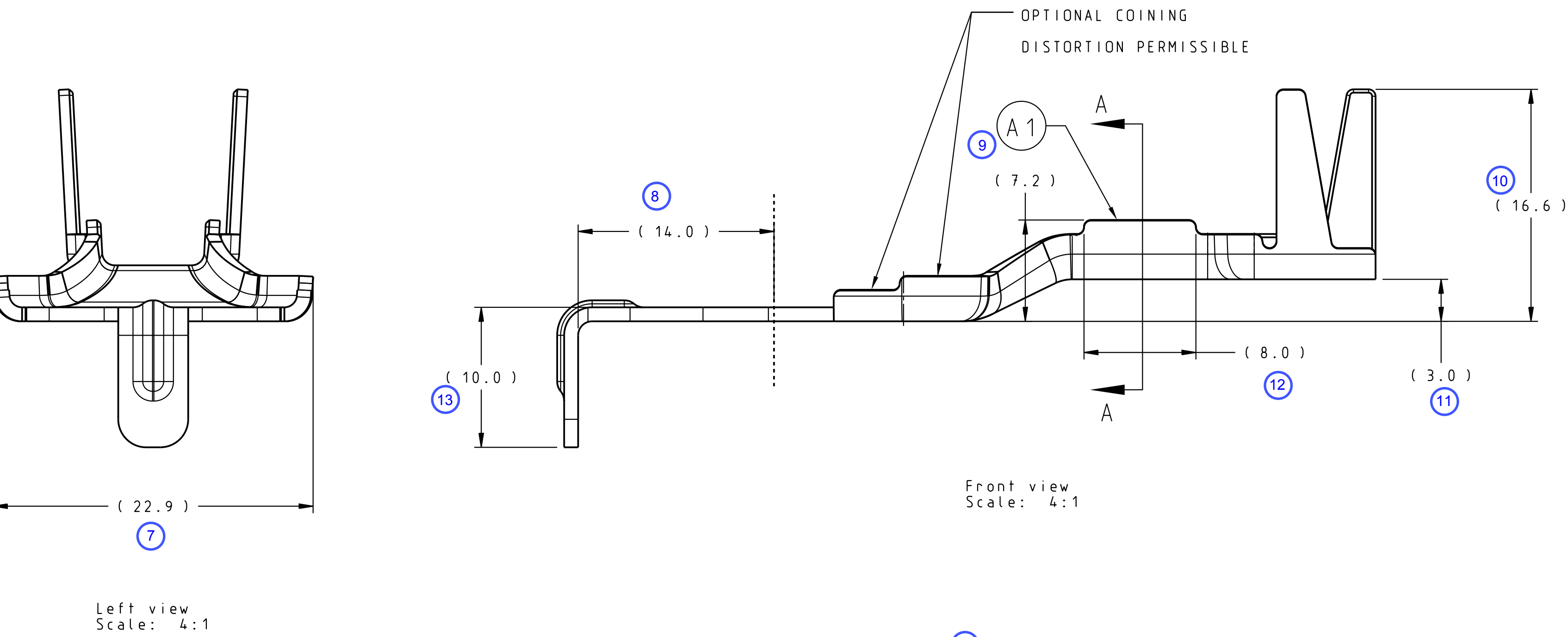
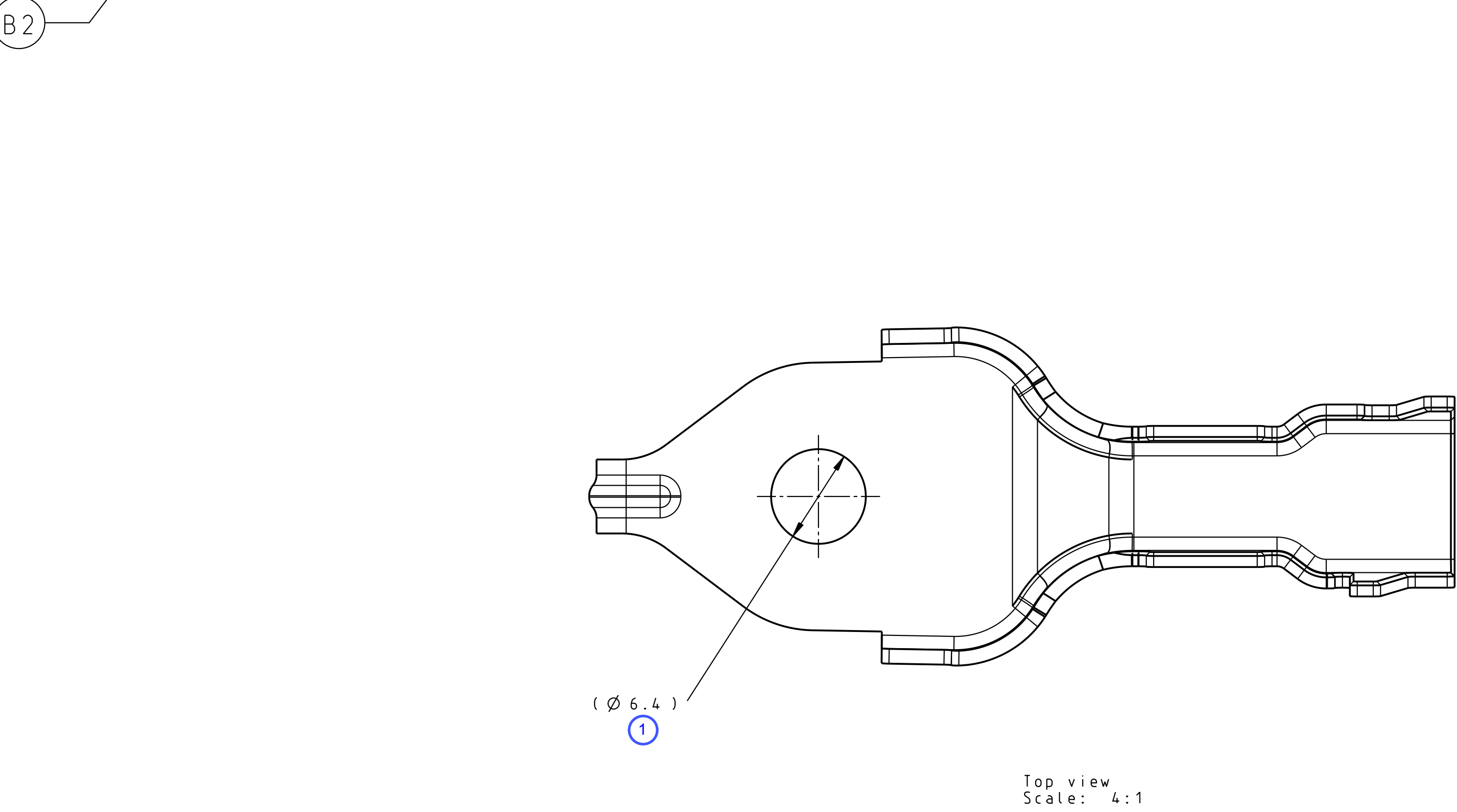
Date

Print Name

Customer Tracking Number (optional)

FORD PART NO.	SUPPLIER PART NO.	DESCRIPTION	GREASED Y/N	BASE MATERIAL	PLATING MATERIAL	PLATING THICKNESS	COPPER WEIGHT	TOTAL WEIGHT	MATERIAL THICKNESS	MATERIAL HARDNESS	MAX. AMBIENT TEMPERATURE	CONDUCTOR MIN/MAX CSA	FINISH ACID BATH WASH	INSULATION MIN/MAX O.D.	MATING PART	
															FORD PART NO.	SUPPLIER PART NO.
MU5T-14463-DB	NA	SONIC-EYELET TERMINAL-UNPLATED	N	UNS-C11000 UNS-C10200 UNS-C10910	N/A	N/A	9.0 G	9.0 G	1.00 ±0.25	1/2 HARD	125°C	0.35 - 20.0 (mm²)	POST STAMPING OF TERMINAL	1.70/4.04	N/A	N/A

TERMINAL CRIMP AND GRIP REFERENCE TABLE										
FORD PART NO.	WIRE TYPE/ SPECIFICATION (DESIGN INTENT)	BUNDLE SIZE (mm ²)	NUMBER OF WIRES	STRIP LENGTH (mm)	CONDUCTOR		INSULATION		NOTES	SUPPLIER PART NO.
					BOND WIDTH (mm)	BOND HEIGHT (mm)	ICW (mm) ±0.10	ICH (mm) ±0.010	NOTES	
MU5T-14463-DB	ESB-M1L120-A or ESB-M1L123-A	(5.0-20.0)	5-20	10.0	3.5 MIN 7.0 MAX	SEE REFERENCE CHART	8.9 MIN 11.78 MAX	6.6 MIN 10.8 MAX		N/A



- NOTES: UNLESS OTHERWISE SPECIFIED
- PARTS CONFORM TO THE ELECTRICAL CONNECTION SYSTEM DESIGN SPECIFICATION (SDS) VERSION 23.
 - DVP IS BASED ON EL-0176 VER 9 AND LEAR SPLICE TECHNOLOGY INFORMATION. PULL TEST AND PROCEDURE EST-460.
 - N.A.
 - SOLDER DIP REQUIRED AFTER WIRE ATTACHMENT PER ES-BU5T-14A121-A, SECTION 3.5 USING LEAD FREE SOLDER AS SAC305 OR EQUIVALENT.
 - 0.5 MAX CUT-OFF
 - GENERAL TOLERANCES: ±0.3MM ALL ONE PLACE, ±0.10MM ALL TWO PLACE DIMENSIONS, ±3.0 DEGREES ALL ANGULAR DIMENSIONS.
 - DENOTES DIMENSIONS CHECKED WITH LEAR GAGES G-22-B CHARTED.
 - ALL WELD TERMINATIONS SHALL COMPLY WITH USCAR-38 REV. DEC. 2009.

UNLESS OTHERWISE SPECIFIED GENERAL TOLERANCES WILL BE:

SIZE (MM)	FIXED±	CLOSURE±
0-10	0.20	0.32
10-16	0.25	0.40
16-25	0.32	0.50
25-40	0.40	0.63
40-63	0.50	0.80
63-100	0.63	1.00
100-160	0.80	1.25
160 & OVER - TO FIND FIXED N DIMENSIONAL TOLERANCES MULTIPLY BY 0.5%		

APPROVED
By KMD at 5:08 pm, Dec 04, 2018

REVISIONS			
ORIGINATOR	CHECKER	ENGR APP	MATL APP
RELEASE OF PART MUST-14463-DA			
AELE-E-12982958-484		20171130	
JWALOW11	MBAYDOUN	THURST	XXX
A1: RAISED WALL HEIGHT RELEASED MUST-14463-DB			
AELE-E-12982958-538		20180517	
JWALOW11	MBAYDOUN	MBAYDOUN	XXX
B1: REVISED CSA B2: REVISED CHART PART SUFFIX			
AELE-E-12982958-707		20180911	
JWALOW11	MBAYDOUN	MBAYDOUN	XXX

APPROVED
By ALD at 8:48 am, Nov 12, 2018

REFERENCE		N/A	
PART MUST COMPLY WITH RESTRICTED SUBSTANCE MANAGEMENT STANDARD WSS-M99P9999-A1 TO SAFEGUARD HEALTH, SAFETY AND THE ENVIRONMENT			
DRAFTED IN ACCORDANCE WITH FORD MOTOR COMPANY ENGINEERING CAD AND DRAFTING STANDARDS VERSION 29			3RD ANGLE PROJ DIMENSIONS ARE IN MILLIMETERS
CAD TYPE	CAD LOC.	CAD FILE	DTMC
K-CATIAS	Tce	MUST-14463-D MUST-14463-B.DWG	:2(B) :4(B)
OPER. NO.	UNIT	DRAWING	IS MASTER
N/A	N/A	MUST-14463-DB	
DESIGN	DETAIL	TITLE	SHT 1 OF 1
JWALOW11	JWALOW11	TRMNL-EYLT TYP	
CHECKED	SAFETY		
MBAYDOUN	MFG USE		
SCALE	DATE	DIVISION	ESEE
4:1	20180911	PLANT	N/A
 FORD MOTOR COMPANY			

Production Part Approval Dimensional Test Results



ORGANIZATION: Royal Die & Stamping Co., Inc. SUPPLIER/VENDOR CODE:					PART NUMBER: MU5T-14463-DB PART NAME: Eyelet Terminal - Loose Parts							
INSPECTION FACILITY: Royal Die & Stamping Co., Inc. ADDITIONAL REMARKS:					DESIGN RECORD CHANGE LEVEL: B2 ENGINEERING CHANGE DOCUMENTS:							
ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)					REMARKS	OK	NOT OK
Material	C110	Attribute	12/12/2024	1	Pass						X	
Note 1	Parts conform to the electrical connection system design specification (SDS) version 23.	Attribute	12/12/2024	1	Pass						X	
Note 2	DVP is based on EL-0176 VER 9 and Lear splice technology information. Pull test and procedure EST-460	Attribute	12/12/2024	1	Pass						X	
Note 3	N/A	Attribute	12/12/2024	1	Pass						X	
Note 4	Solder dip required after wire attachment per ES-BU5T-14A121-A, section 3.5 using Lead free solder as SAC305 or equivalent.	Attribute	12/12/2024	1	Pass						X	
Note 5	0.5 max cut-off	Attribute	12/12/2024	1	Pass						X	
Note 6	General tolerances: +/-0.3mm all one place, +/- 0.10mm all two place dimensions, +/- 3.0 degrees all angular dimensions.	Attribute	12/12/2024	1	Pass						X	
Note 7	Denotes dimensions checked with Lear gages G-22-B charted.	Attribute	12/12/2024	1	Pass						X	
Note 8	All weld terminations shall comply with USCAR-38 REV. DEC. 2009.	Attribute	12/12/2024	1	Pass						X	
1	Diameter 6.4 [Internal]	6.70 mm 6.10 mm	12/12/2024	5	6.40	6.40	6.40	6.40	6.40		X	
2	Crimp width 13.5 [Internal]	13.80 mm 13.20 mm	12/12/2024	5	13.36	13.35	13.36	13.35	13.36		X	
3	Tab width 5.0 [Internal]	5.30 mm 4.70 mm	12/12/2024	5	4.96	4.95	4.96	4.96	4.96		X	
4	Width 12.3 [Internal]	12.60 mm 12.00 mm	12/12/2024	5	12.42	12.44	12.45	12.43	12.44		X	
5	Diameter to tab 15.0 [Internal]	15.30 mm 14.70 mm	12/12/2024	5	15.06	14.99	15.04	15.04	15.03		X	
6	Part length 58.0 [Internal]	Attribute	12/12/2024	1	Pass					57.98, 57.99, 58.01, 57.00, 58.01	X	
7	Width 22.9 [Internal]	23.20 mm 22.60 mm	12/12/2024	5	22.73	22.70	22.71	22.71	22.73		X	
8	Diameter to tab 14.0 [Internal]	14.30 mm 13.70 mm	12/12/2024	5	14.18	14.22	14.21	14.21	14.19		X	
9	Height 7.2 [Internal]	7.50 mm 6.90 mm	12/12/2024	5	7.25	7.24	7.24	7.23	7.25		X	
10	Crimp height 16.6 [Internal]	16.90 mm 16.30 mm	12/12/2024	5	16.51	16.54	16.52	16.53	16.52		X	
11	Body to crimp 3.0 [Internal]	3.30 mm 2.70 mm	12/12/2024	5	2.99	2.96	2.98	2.95	2.97		X	
12	Side tab width 8.0 [Internal]	Attribute	12/12/2024	1	Pass						X	
13	Tab height 10.0 [Internal]	10.30 mm 9.70 mm	12/12/2024	5	9.89	9.90	9.90	9.90	9.90		X	
14	Opening angle 6° [Internal]	9.00 Deg° 3.00 Deg°	12/12/2024	5	6.85	6.95	6.87	6.89	6.90		X	
15	Opening 7.5 [Internal]	7.80 mm 7.20 mm	12/12/2024	5	7.46	7.44	7.45	7.44	7.44		X	
16	Opening height 3.2 [Internal]	3.50 mm 2.90 mm	12/12/2024	5	3.30	3.28	3.28	3.27	3.29		X	
17	Thickness 1.0 [Internal]	1.30 mm 0.70 mm	12/12/2024	5	1.00	1.01	1.03	0.97	1.00		X	
18	Radius (0.9)	Attribute	12/12/2024	1	Pass						X	

Production Part Approval
Dimensional Test Results



ORGANIZATION: Royal Die & Stamping Co., Inc. SUPPLIER/VENDOR CODE:					PART NUMBER: MU5T-14463-DB PART NAME: Eyelet Terminal - Loose Parts			
INSPECTION FACILITY: Royal Die & Stamping Co., Inc. ADDITIONAL REMARKS:					DESIGN RECORD CHANGE LEVEL: B2 ENGINEERING CHANGE DOCUMENTS:			
ITEM	DIMENSION / SPECIFICATION	SPECIFICATION / LIMITS	TEST DATE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA)	REMARKS	OK	NOT OK

Blanket statements of conformance are unacceptable for any test results.

MARCH **CFG-1003**
2006

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
Lidia Ribota	Quality Analyst	12/12/2024

wieland

WIELAND ROLLED PRODUCTS NORTH AMERICA
MILL PRODUCTS
305 LEWIS & CLARK BLVD.
EAST ALTON, IL 62024

CERTIFICATE OF CHEMICAL AND
MECHANICAL TESTS



22019661 - PAGE 1

ORDER ENTRY DATE 09/01/22	CUSTOMER ORDER NUMBER 037765-2
CUSTOMER SPECIFICATION NUMBER	CUSTOMER PART NAME AND NUMBER 0394X3.8101102P

ITEM/ARTICLE NO. 048463A	ORDER NO. B64810
DATE SHIPPED 11/03/22	NET QTY SHIPPED 9,788

SOLD TO ROYAL DIE & STAMPING
CO INC
125 MERCEDES DR.
CAROL STREAM IL 60188

SHIP TO ROYAL DIE & STAMPING CO
125 MERCEDES DR.
CAROL STREAM IL 60188

.03940 3.8100 H02 1100 STRIP
THICKNESS IN INCHES WIDTH IN INCHES

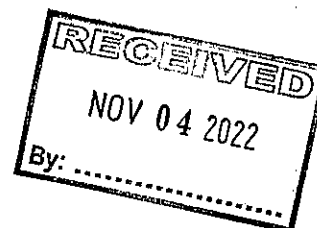
PROPERTIES & CHEMISTRY

SPECIFICATIONS

ROUND NUMBER(S)

8666450-00

TENSILE	LNG	KSI	37.0- 46.0	43.0
CONDUCTIVITY	% IACS			102.0
CU		99.900-100.000 %	99.970	



COMMENTS:

11/03/22 075659

We hereby certify that the product described in
this report has been tested and the results of
those tests are shown above.

Sam Waldo
PE Manager

DATE 11/03/22 **

MACRO #105 (5/08)

REVERE COPPER PRODUCTS, INC.

ADDRESS ASHLEY MOORE
INQUIRY ONE REVERE PARK
TO ROME, NY 13440-5561



REPORT DATE 09/17/2024
REVERE NO 75396
EN 10204:2004-3.1

PAGE 1

CUSTOMER DATE	CUSTOMER ORDER NUMBER
04/29/2024	5400716160
CUSTOMER CODE	CUSTOMER PART NUMBER
148035070	CUFLR00943

10

CERTIFICATE OF TEST

SOLD TO

TKMNA COPPER AND BRASS SALES
ATTN: ACCOUNTS PAYABLE
P O BOX 5116
SOUTHFIELD MI 48086-5116

SHIP TO

TKMNA COPPER AND BRASS SALES
469 WOODCREEK DRIVE
BOLINGBROOK, IL 60440

ITEM NO.	DESCRIPTION
C3901	REVERE C11000 H02 TEMPER STRIP ASTM B152 COUNTERCLOCKWISE 16"ID X 450 PIW COILS(400-550) .0395" X 12" X COILS (+/- .0005") 3-ID BANDS REQ
	ALLOY:C11000 TEMPER:H02 1/2 Hard SPECS ASTM B152/B152M-24

CHEMICAL ANALYSIS

HEAT#/LOT CU
*26718801 99.96%
*267188 99.96%
CU INCLUDES- +Ag

PHYSICAL ANALYSIS

HEAT#/LOT	HARDNESS	TENSILE	YIELD	ELONG	COND
	RF	KSI	KSI	% IN 2"	%IACS
*26718801	86	44.8	39.5	12	100.2
*267188	86	44.8	39.5	12	100.2

WE CERTIFY THAT THE FOREGOING RESULTS ARE CORRECT AND THAT THIS MATERIAL HAS BEEN PROCESSED, INSPECTED, AND TESTED IN COMPLIANCE WITH THE REQUIREMENTS OF YOUR PURCHASE ORDER, AND WITH THE SPECIFICATION REQUIREMENTS OF THE STATED REVISION OR THE REVISION IN EFFECT ON THE DATE OF SHIPMENT IF NO REVISION IS STATED. THIS MATERIAL HAS NOT COME IN CONTACT WITH FREE MERCURY DURING THE MANUFACTURING PROCESS.

Quality Assurance Manager
Julie Z Jeannotte

Heat / Lot numbers preceded by an asterisk were Melted and Manufactured in the U S A.

CERTIFICATE OF TEST

Customer: COPPER & BRASS SALES
469 Woodcreek Drive
Bolingbrook, IL 60440-4914

Specification: ASTM B 152/B152M-19
Customer PO No: 5520241457
PMX Order No: 140335-1
PMX Bill of Lading: 00337022
Pallet | Tag No.: 924101 | Q6K5SC-B

Customer Part No: CUFLR00943

Description: C11000 .0395 H020

Chemical Composition (Wt %) **Test Date** 07/02/24 **Method** (See below**)

Element Cu
Spec Min. 99.9000
Spec Max. 100.000
Actual 99.9912

Dimensions	Units/Scale	Spec. Min.	Spec. Max.	Actual
Thickness	in	.039	.04	.0397
Width	in	13.234	13.266	PASS

Mechanical Properties **Test Date** 07/28/24

	Method	Units/Scale	Spec. Min.	Spec. Max.	Actual
Tensile Strength	ASTM-E8-21	ksi	37.0	46.0	40.8
Yield Strength	(REF) ASTM-E8-21	ksi	NA	NA	38.0
Elongation	(REF) ASTM-E8-21	%	NA	NA	14
Hardness 1	(REF) ASTM-E18-20	HRF	NA	NA	82
Hardness 2					
Grain Size	(REF) ASTM-E112-13	mm	NA	NA	.025

Other Tests	Test Date	Method	Units/Scale	Spec. Min.	Spec. Max.	Actual
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PMX Industries, Inc.

We certify that these test results were obtained from samples of the material lots identified above. The test procedures and material production conform to chemical and mechanical requirements of applicable customer and ASTM specifications. This document may not be reproduced, except in full, without the written approval of PMX Industries, Inc. **Chemistry is analyzed according to methods ASTM-E1621 and/or ASTM-E-1251. Country of Melt and MFG: USA


Mary Pasker Laboratory Supervisor

07/30/24
Date

PMX INDUSTRIES, INC. 5300 WILLOW CREEK DRIVE SW, CEDAR RAPIDS, IA 52404-4303

TEL: 319/368-7700 FAX: 319/368-7701 E-MAIL: Mary.Pasker@ipmx.com

ISO 9001:2015 REGISTERED



This is to certify that the Quality Management System of:

Shanghai Tianshen Copper Group Co., Ltd.

No. 111, Tiantai Road, Xinbang Industrial Park, Songjiang District, Shanghai City,
201600, China

(IATF USI: GE4T52)

applicable to:

The slitting of copper strips, copper sheets and steel strips, the manufacture of stamped parts

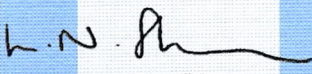
has been assessed and registered by NQA, Warwick House, Houghton Hall Park,
Houghton Regis, Dunstable, LU5 5ZX, UK

against the provisions of:

IATF 16949:2016

(Clause 8.3 product design of IATF 16949:2016 is justifiably excluded)

This registration is subject to the company maintaining a quality management system to the above standard, which will be monitored by NQA.


Managing Director

NQA Certificate No:
IATF Certificate No:
First Issue Date:
Valid Until:
Version:

T86336
0485435
16 October 2023
15 October 2026
1



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ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATE

This is to Certify that the ENVIRONMENTAL MANAGEMENT SYSTEM of

Shanghai Tianshen Copper Group Co., Ltd.

Registered Address: No. 467, Sizhi Road, Xinbang Industrial Park, Songjiang District,
Shanghai

Audit Address: No. 111, Tiantai Road, Xinbang, Songjiang District, Shanghai

has been assessed by NOA Certification and found to comply with

GB/T 24001-2016 idt ISO14001:2015

for the scope of

High-precision strip cutting (copper strip, aluminum strip, steel strip)

Certificate Number: NOA2099256
Unified Social Credit Code: 9131000075477095XQ
Initial Certification Date: 31 Dec. 2019

Surveillance Audit Pass Label:

Surveillance 1
Audit Pass Label

Surveillance 2
Audit Pass Label

Surveillance 3
Audit Pass Label

Certification Manager



MSCB-261

ACCREDITED
Management Systems
Certification Body



Please scan the QR code
above by WeChat to check
certificate validity.

Certificate Issue Date: 06 Jan. 2023
Re-certification Audit Date: 14 Dec. 2022

Certificate Expiry Date: 30 Dec. 2025
Original Certificate Expiry Date: 31 Dec. 2022

This certificate is issued by NOA Testing & Certification Group Ltd. The certificate holder shall perform the supervision and audit in accordance with the certification and accreditation rules and the certification contract, and affix a surveillance audit pass label to maintain the validity of certificate. To verify the validity of certificate, please visit our website (www.noagroup.com) or scan the QR code above by WeChat, or visit the CNCA website (www.cnca.gov.cn)

NOA Testing & Certification Group Ltd.

Add.: Building 26, Lane 2777, East Jinxiu Road, Free Trade Zone, Shanghai, China

Email: noa@noagroup.com



QUALITY MANAGEMENT SYSTEM CERTIFICATE

This is to Certify that the QUALITY MANAGEMENT SYSTEM of

Shanghai Tianshen Copper Group Co., Ltd.

Registered Address: No. 467, Sizhi Road, Xinbang Industrial Park, Songjiang District,
Shanghai

Audit Address: No. 111, Tiantai Road, Xinbang, Songjiang District, Shanghai

has been assessed by NOA Certification and found to comply with

GB/T 19001-2016 idt ISO9001:2015

for the scope of

High-precision strip cutting (copper strip, aluminum strip, steel strip)

Certificate Number: NOA20101696
Unified Social Credit Code: 9131000075477095XQ
Initial Certification Date: 30 Apr. 2020

Surveillance Audit Pass Label:

Surveillance 1
Audit Pass Label

Surveillance 2
Audit Pass Label

Surveillance 3
Audit Pass Label

Certification Manager



MSCB-261

ACCREDITED
Management Systems
Certification Body



Please scan the QR code
above by WeChat to check
certificate validity.

Certificate Issue Date: 06 Jan. 2023

Certificate Expiry Date: 29 Apr. 2026

This certificate is issued by NOA Testing & Certification Group Ltd. The certificate holder shall perform the supervision and audit in accordance with the certification and accreditation rules and the certification contract, and affix a surveillance audit pass label to maintain the validity of certificate. To verify the validity of certificate, please visit our website (www.noagroup.com) or scan the QR code above by WeChat, or visit the CNCA website (www.cnca.gov.cn)

NOA Testing & Certification Group Ltd.

Add.: Building 26, Lane 2777, East Jinxiu Road, Free Trade Zone, Shanghai, China

Email: noa@noagroup.com



Shanghai Tianshen Copper Group Co., Ltd.

Certificate of Inspection

Material No.	Item		Alloy	Dimensions (inch)				Temper	Net Weight (lbs)			Lot No.		
RE0394X3.8101102P	Copper		C11000	0.0394x3.81				H02	2722.68			Z66-241026-05-01		
Chemical Composition (%)		Cu	P	Bi	Sb	As	Fe	Ni	Pb	Sn	S	Zn	O	
	Std	≥99.9	—	—	—	—	—	—	—	—	—	—	—	
	Result	99.989	—	—	—	—	—	—	—	—	—	—	—	
		Mn	Al	Cd	Mg	C	Si	Cr	Ti		Others			
	Std	—	—	—	—	—	—	—	—		—			
	Result	—	—	—	—	—	—	—	—		—			
Mechanical& physical properties	Tensile Strength (N/mm²)		Elongation (%)	Hardness (HRF)		Yeild strength (N/mm^2)		Electrical Conductivity IACS (%)	Dimension Tolerance (inch)		Quality Standard			
									Thickness	Width				
Std	255~315		—	77~89		—		97.16Min	0.0386-0.0402	3.807-3.813	ASTM B152			
Result	268		—	80		—		99.67	0.0393	3.8083				
Customer	Royal Precision Products,LLC							Remarks: Mill Sheet No.: A24101638						
Instruction	Please unpack and inspect the materials immediately after receipt and store them indoors and in a dry place. If there is any objection after acceptance, please inform within two weeks, and indicate the material Specifications,Batch No. Weight, etc. for checking.													



Checker (Seal) /Date: 2024.11.09

Quality Department (Seal) :



Shanghai Tianshen Copper Group Co., Ltd.

Certificate of Inspection

Material No.	Item		Alloy	Dimensions (inch)				Temper	Net Weight (lbs)			Lot No.		
RE0394X3.8101102P	Copper		C11000	0.0394x3.81				H02	3024.71			Z66-241026-04-01		
Chemical Composition (%)		Cu	P	Bi	Sb	As	Fe	Ni	Pb	Sn	S	Zn	O	
	Std	≥99.9	—	—	—	—	—	—	—	—	—	—	—	
	Result	99.989	—	—	—	—	—	—	—	—	—	—	—	
		Mn	Al	Cd	Mg	C	Si	Cr	Ti		Others			
	Std	—	—	—	—	—	—	—	—		—			
	Result	—	—	—	—	—	—	—	—		—			
Mechanical& physical properties	Tensile Strength (N/mm ²)		Elongation (%)	Hardness (HRF)	Yeild strength (N/mm^2)		Electrical Conductivity IACS (%)	Dimension Tolerance (inch)		Quality Standard				
								Thickness	Width					
Std	255~315		—	77~89		—		97.16Min	0.0386-0.0402	3.807-3.813		ASTM B152		
Result	260		—	77		—		99.70	0.03917	3.8079				
Customer	Royal Precision Products,LLC							Remarks: Mill Sheet No.: A24101455						
Instruction	Please unpack and inspect the materials immediately after receipt and store them indoors and in a dry place. If there is any objection after acceptance, please inform within two weeks, and indicate the material Specifications,Batch No. Weight, etc. for checking.													



Checker (Seal) /Date: 2024.11.09

Quality Department (Seal)



Shanghai Tianshen Copper Group Co., Ltd.

Certificate of Inspection

Material No.	Item		Alloy	Dimensions (inch)				Temper	Net Weight (lbs)			Lot No.		
RE0394X3.8101102P	Copper		C11000	0.0394x3.81				H02	1386.69			Z66-241026-03-01		
Chemical Composition (%)		Cu	P	Bi	Sb	As	Fe	Ni	Pb	Sn	S	Zn	O	
	Std	≥99.9	—	—	—	—	—	—	—	—	—	—	—	
	Result	99.986	—	—	—	—	—	—	—	—	—	—	—	
		Mn	Al	Cd	Mg	C	Si	Cr	Ti		Others			
	Std	—	—	—	—	—	—	—	—		—			
	Result	—	—	—	—	—	—	—	—		—			
Mechanical& physical properties	Tensile Strength (N/mm²)		Elongation (%)	Hardness (HRF)	Yeild strength (N/mm^2)		Electrical Conductivity IACS (%)	Dimension Tolerance (inch)		Quality Standard				
								Thickness	Width					
Std	255~315		—	77~89		—		97.16Min	0.0386-0.0402	3.807-3.813		ASTM B152		
Result	279		—	84		—		98.76	0.03906	3.8079				
Customer	Royal Precision Products,LLC							Remarks: Mill Sheet No.: A24100502						
Instruction	Please unpack and inspect the materials immediately after receipt and store them indoors and in a dry place. If there is any objection after acceptance, please inform within two weeks, and indicate the material Specifications,Batch No. Weight, etc. for checking.													

Checker (Seal) /Date: 2024.11.09

Quality Department (Seal) :





Shanghai Tianshen Copper Group Co., Ltd.

Certificate of Inspection

Material No.	Item		Alloy	Dimensions (inch)				Temper	Net Weight (lbs)		Lot No.		
RE0394X3.81011 02P	Copper		C11000	0.0394x3.81				H02	1761.48		Z66-241015-03-01		
Chemical Composition (%)		Cu	P	Bi	Sb	As	Fe	Ni	Pb	Sn	S	Zn	O
	Std	≥99.9	—	—	—	—	—	—	—	—	—	—	—
	Result	99.985	—	—	—	—	—	—	—	—	—	—	—
		Mn	Al	Cd	Mg	C	Si	Cr	Ti		Others		
	Std	—	—	—	—	—	—	—	—		—		
	Result	—	—	—	—	—	—	—	—		—		
Mechanical& physical properties	Tensile Strength (N/mm²)		Elongation (%)	Hardness (HRF)		Yeild strength (N/mm^2)		Electrical Conductivity IACS (%)	Dimension Tolerance (inch)		Quality Standard		
									Thickness	Width			
Std	255~315		—	77~89		—		97.16Min	0.0386-0.0402	3.807-3.813	ASTM B152		
Result	277		—	82		—		98.3	0.03902	3.8083			
Customer	Royal Precision Products,LLC							Remarks: Mill Sheet No.: A24100419					
Instruction	Please unpack and inspect the materials immediately after receipt and store them indoors and in a dry place. If there is any objection after acceptance, please inform within two weeks, and indicate the material Specifications,Batch No. Weight, etc. for checking.												

Checker (Seal) /Date: 2024.11.09

Quality Department (Seal) :



CERTIFICATE OF REGISTRATION



**Quality
System
Registrar**



Having been audited in accordance with requirements of

ISO 9001:2015 – ASQ/ANSI/ISO 9001:2015

SRI Quality System Registrar, 161 Thorn Hill Road, Warrendale, Pennsylvania, 15086, USA, hereby grants to:

thyssenkrupp Materials NA

**Copper and Brass Sales Division
Southfield, Michigan, USA**

**thyssenKrupp Materials de Mexico
Saltillo, Coahuila, Mexico**

Registration of the management system at its locations:

Headquarters: Southfield, Michigan, USA

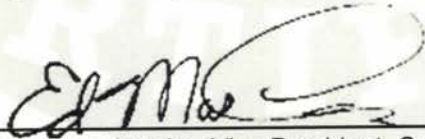
**Bolingbrook, Illinois, USA
Brownsburg, Indiana, USA
Concord, Ontario, Canada
Dayton, Ohio, USA
Edmonton, Alberta, Canada**

**Kennesaw, Georgia, USA
Saltillo, Coahuila, Mexico
Smithfield, Rhode Island, USA
Surrey, British Columbia, Canada**

The conditions for maintaining this certificate of registration are set forth in the SRI registration agreements R20.3 and R20.4. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization.

Scopes of ISO 9001:2015 registration: (See registration appendix – pages 2 through 3)
Initial SRI Registration dates: (See registration appendix – pages 2 through 3)
Current registration period: September 15, 2024 through September 14, 2027

Signed for SRI:


Edward L. Maschmeier, Vice President, Certification

Release Date: September 15, 2024
Certificate Number: 023949
Registration Number: 0454-00-CS



SCOPE OF REGISTRATION



Appendix to the ISO 9001:2015 Certificate of Registration issued to:

thyssenkrupp Materials NA

Copper and Brass Sales Division
Southfield, Michigan, USA

thyssenKrupp Materials de Mexico
Saltillo, Coahuila, Mexico

Headquarters

Copper and Brass Sales Division, 22355 West 11 Mile Road, Southfield, Michigan, 48033, USA

Registration # 0454-00

Scope of registration: "Support services, purchasing and subcontractor purchasing for the processing and distribution of metal products, electrical components and industrial plastics."

Initial SRI registration date: March 3, 2000

469 Woodcreek Drive, Bolingbrook, Illinois, 60440, USA

Registration # 0454-52

Scope of registration: "Contract review, order entry, purchasing and subcontractor purchasing, processing and distribution of metal products."

Initial SRI registration date: July 5, 2007

530 Northfield Drive, Brownsburg, Indiana, 46112 USA

Registration # 0454-01

Scope of registration: "Processing and distribution of metal products."

Initial SRI registration date: September 13, 1995

2821 Langstaff Rd., Concord, Ontario, L4K 5C6, Canada

Registration # 0454-49

Scope of registration: "Contract review, order entry, purchasing and subcontractor purchasing, processing and distribution of metal products, electrical components and industrial plastics."

Initial SRI registration date: January 23, 2008

10100 Innovation Drive, Suite 210, Dayton, Ohio, 45342, USA

Registration # 0454-18

Scope of registration: "Contract review, order entry, purchasing and subcontractor purchasing of metal products and electrical components."

Initial SRI registration date: December 11, 1998

Certificate Date: September 15, 2024
Certificate Number: 023949
Registration Number: 0454-00-CS



SCOPE OF REGISTRATION



Appendix to the ISO 9001:2015 Certificate of Registration issued to:

thyssenkrupp Materials NA

Copper and Brass Sales Division
Southfield, Michigan, USA

thyssenKrupp Materials de Mexico
Saltillo, Coahuila, Mexico

9451 45th Ave NW, Edmonton, Alberta, T6E 6B9, Canada

Registration # 0454-11

Scope of registration: "Processing and distribution of metal products and electrical components."
Initial SRI registration date: October 30, 2000

1980 Shiloh Road, Building 7, Suite 150, Kennesaw, Georgia, 30144, USA

Registration # 0454-70

Scope of registration: "The processing and distribution of metal products."
Initial SRI registration date: March 11, 2019

ThyssenKrupp Materials de Mexico

Registration # 0454-62

Avenida San Lucas No. 1796, Nabzana II, Lote S/N, Parque Industrial Santa Fe, Saltillo, Coahuila, 25300, Mexico

Scope of registration: "Processing and distribution of metal products and electrical components."
Initial SRI registration date: June 29, 2015

279 Jenckes Hill Road, Smithfield, Rhode Island, 02917, USA

Registration # 0454-07

Scope of registration: "Processing and distribution of metal products and electrical components."
Initial SRI registration date: May 21, 1999

19044 95A Avenue, Surrey, British Columbia, V4N 4P2, Canada

Registration # 0454-32

Scope of registration: "Contract review, order entry, and subcontractor purchasing and processing and distribution of metal products and electrical components."
Initial SRI registration date: October 30, 2000

Certificate Date: September 15, 2024
Certificate Number: 023949
Registration Number: 0454-00-CS



Certificate US21/819944551.00

The management system of

Wieland Metal Services, LLC

457 Warwick Industrial Drive
Warwick, RI 02886, United States

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

**Distribution and Secondary Processing of Aluminum, Copper
and Steel Alloy Flat Rolled, Tube and Bar Products.**

Further clarifications regarding the scope of this certificate and the applicability of
ISO 9001:2015 requirements may be obtained by consulting the organization.

This certificate is valid from 18 January 2022 until 18 January 2025
and remains valid subject to satisfactory surveillance audits.
Recertification audit due a minimum of 60 days before the expiration date.

Issue 2. Certified since July 2021.

The organisation was previously certified by a different body
against ISO 9001 since 19 January 2010.

The audit leading to this certificate commenced on 25/10/2021.

Previous issue certificate validity date was until 18/01/2022.

This is a multi-site certification.

Additional site details are listed on subsequent pages.

Authorized by:

Dan Seal

Dan Seal

Technical Accreditation Manager,
Knowledge Solutions
SGS North America, Inc.

201 Route 17 North, Rutherford, NJ 07070, USA

t (201) 508-3000 f (201) 935-4555 www.us.sgs.com

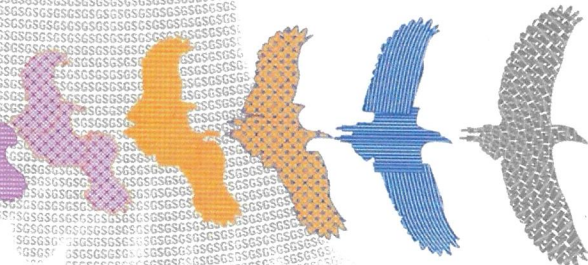
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Page 1 of 2

SGS



SGS



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Wieland Metal Services, LLC

ISO 9001:2015

Issue 2



Additional facilities

150 Lackawanna Avenue, Parsippany, NJ 07054, United States
Scope: The Warehousing, Processing and distribution
of Metal Materials.

180 Alexandra Way, Carol Stream, IL 60188, United States
Scope: Slitting and coating.

2081 McCrea Street, Alliance, OH 44601, United States
Scope: Slitting and coating.

5100 S Archibald Ave, Ontario, CA 91762, United States
Scope: Slitting.

Calle La Griega #117, Parque Industrial Queretaro, Santa Rosa
Jauregui, 76220, Mexico
Scope: The Warehousing, Processing and distribution
of Metal Materials.

Centro Industrial Rio Canas Carretera 175 Lote #29
Caguas, 00725, Puerto Rico
Scope: Slitting.





Certificate US21/819944552

The management system of

Wieland Metals, Inc

567 Northgate Parkway
Wheeling 60090, United States

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities:

Manufacture of Copper and Copper Alloy Strip Products

Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2015 requirements may be obtained by consulting the organization.

This certificate is valid from 20 January 2022 until 20 January 2025
and remains valid subject to satisfactory surveillance audits.
Recertification audit due a minimum of 60 days before the expiration date.
Issue 2. Certified since July 2021.
Certified since 31 January 2007 by former Certification Body.

The audit leading to this certificate commenced on 08/11/2021.
Previous issue certificate validity date was until 20/01/2022.

Authorized by:

Dan Seal

Dan Seal
Technical Accreditation Manager,
Knowledge Solutions
SGS North America, Inc.

201 Route 17 North, Rutherford, NJ 07070, USA
t (201) 508-3000 f (201) 935-4555 www.us.sgs.com

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Page 1 of 1



ANSI National Accreditation Board
ACCREDITED
ISO/IEC 17021-1
MANAGEMENT SYSTEMS
CERTIFICATION BODY



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MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
C685174

Valid:
12 November, 2024 – 11 November, 2027

IATF Certificate No:
0554754

This is to certify that the management system of

Royal Power Connections

125 Mercedes Drive, Carol Stream, IL, 60188, USA (USI: 36NW3X)

has been found to conform to the Quality Management System standard:

IATF 16949:2016

This certificate is valid for the following scope:

DESIGN AND MANUFACTURE OF PRECISION METAL STAMPINGS. THE ASSEMBLY OF COMPONENTS.

EXCLUSION: NONE

Place and date:
Katy, TX, 13 November, 2024
Revision 0



For the issuing office:
DNV - Business Assurance
1400 Ravello Drive, Katy, TX, 77449-5164, USA



Sherif Mekkawy
Management Representative

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
C685173

Initial certification date:
04 September, 2018
(by different Certification body)

Valid:
12 November, 2024 – 11 November, 2027

This is to certify that the management system of
Royal Power Connections
125 Mercedes Drive, Carol Stream, IL, 60188, USA

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Design and Manufacture of Precision Metal Stampings. The Assembly of Components.

Place and date:
Katy, TX, 13 November, 2024

For the issuing office:
DNV - Business Assurance
1400 Ravello Drive, Katy, TX, 77449-5164, USA



Sherif Mekkawy
Management Representative

Laboratory Scope

Royal Power Solutions (Carol Stream) Quality Laboratory is qualified to perform the following inspection, testing and calibration activities. All other activities are performed by accredited outside laboratories.

Inspection/Test/Calibration	Equipment Used	Method and/or Standard Used
First Piece Inspection	Micrometers, Calipers, Indicators, Plug/Pin sets, Optical Comparators/Projectors, Vision and Touch Probe systems (Micro-Vu/OGP/Keyence), Dynes Solution, Force Gages, torque driver/wrenches and Profilometer	QSP-4.10.101
In-process Inspection	Micrometers, Calipers, Indicators, Plug/Pin sets, Optical Comparators/Projectors, Vision and Touch Probe systems (Micro-Vu/OGP/Keyence), Dynes Solution, Force Gages, torque driver/wrenches and Profilometer	QSP-4.10.101
Quality Last Piece Inspection	Micrometers, Calipers, Indicators, Plug/Pin sets, Optical Comparators/Projectors, Vision and Touch Probe systems (Micro-Vu/OGP/Keyence), Dynes Solution, Force Gages, torque driver/wrenches and Profilometer	QSP-4.10.101
Calibrate Depth Micrometers	Jo Block Set, ID # 62444	QSP-4.11.118
Calibrate Drop Indicators	Jo Block Set, ID # 62444	QSP-4.11.110
Calibrate Digital Calipers	Jo Block Set, ID # 62444	QSP-4.11.116
Calibrate Dial Calipers	Jo Block Set, ID # 62444	QSP-4.11.114
Calibrate Height Gages	Jo Block Set, ID # 62444	QSP-4.11.111
Calibrate Outside Micrometers	Jo Block Set, ID # 62444	QSP-4.11.109
Calibrate Test / Drop Indicators	Jo Block Set, ID # 62444	QSP-4.11.114