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Mechanical Material Procurement Specification

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REVISION NOTICE

Revision	By	Date	Description of Change
1	MJR	October 1, 2015	Initial Release
2	MJR	March 23, 2016	Extent applicability to all sites Integrate comments from Global QA and Supply Chain
3	MJR	August 15, 2016	Add Standard GD&T for Holes Add Screw Plug for Front Panel Remove High Wycombe Site Add Anodize Spec for Front Panel Add Vendor/Lot Identifier in Part Marking
4	MJR	October 18, 2016	Add Material for Front Panel Extrusion
5	MJR	May 3, 2017	Add Heatpipes Specification Add Punching Requirements for EMI Gasket on Front Panel Add Contact Mark Note for finished parts.
6	MJR	March 23, 2018	Re-Branding of Phase Change Material Include allowance for standard Phase Change Material Manufacturing Tolerances
7	MJR	November 26, 2018	Specify Silkscreen Tolerance to .010” Add allowance for higher thread depth than specify.
8	MJR	February 4, 2019	Add Thickness and Sealing spec for Black Hard Anodize
-	MJR	May 9, 2019	Add wider tolerance allowance for CSK holes (Section 2.7) Add thread inspection requirement. (Section 2.8)
A	MJR	June 13, 2019	Minor typo and clarifications Add Serialization requirements for metalwork (Section 2.2.1)

B	MJR	December 9, 2019	Remove Serialization Requirements in Section 2.2. Add screw details related to front panel assemblies (Section 3.2). Add standard tolerance of +/- .020" for phase change material parts (Section 4.6.2)
C	MJR	February 6, 2020	Update tolerance related to epoxy silkscreen features from .010" to .020", which is in-line with latest drawing practices.
D	MJR	April 15, 2020	Include allowance for anodize tapped holes when drawing specifies anodize-free.
E	MJR	June 23, 2020	Include alternate front panel extrusion profile for 4HP (0.8" pitch) and 5HP (1" pitch)
F	MJR	April 7, 2021	Revise Voiding Specification to reflect current standard.
G	MJR	May 18, 2023	Add Alternate Material for 20GSR Gasket
H	MJR	March 11, 2024	Add baking requirements prior to coricone application.

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1 Introduction

1.1 Purpose

The purpose of this document is to provide additional requirements/clarifications to suppliers of mechanical components/materials on drawings related to manufacture, assembly or acceptability of mechanical parts.

IMPORTANT NOTE: The following specifications apply only to Curtiss-Wright owned drawings and designs.

1.2 Scope

This document details general requirements for mechanical components providing additional information on specific features, tolerances, source of supply, raw materials, finishes and marking requirements. Example of mechanical components are, but not limited to: front panels, bezels, fasteners and metal piece parts.

The processes in this procedure apply to the Curtiss-Wright Defense Solutions sites that indicate X in the table below.

Ottawa, Canada	Ashburn, USA	Letchworth, UK	Santa Clarita, USA
X	X		
Dayton, USA	**Cardiff, UK**	**Neuhasen, Switzerland**	**Trondheim, Norway**

1.3 Responsibilities

All vendors manufacturing mechanical components are responsible for following the requirements outlined in this specification.

- Curtiss-Wright Mechanical Engineering Department is responsible for defining and maintaining this specification.
- Curtiss-Wright Quality Department is responsible for ensuring that the requirements of this specification are complied to by the vendors.
- Curtiss-Wright Supply Chain is responsible for ensuring vendors have the latest version of this specification.

1.4 Applicable Documents

MIL-STD-130	Identification Marking of U.S. Military Property
A-A-56032	Commercial Item Description: Ink, Marking, Epoxy Base
ASTM-B733	Standard Specification for Autocatalytic (Electroless) Nickel-Phosphorus Coatings on Metal
ASTM B187/187M	Standard Specification for Copper, Bus Bar, Rod, and Shapes and General Purpose Rod, Bar, and Shapes
AMS QQ-A-250/11	Aluminum Alloy 6061, Plate and Sheet
AMS QQ-A-225/8	Aluminum Alloy 6061, Bar, Rod, Wire and Special Shapes; Rolled, Drawn, or Cold Finished
AMS QQ-A-200/8	Aluminum Alloy 6061, Bar, Rod, Shapes, Tube, and Wire, Extruded A96061
ASTM B209	Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B211	Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire
819576	Curtiss-Wright Document, Cosmetic Specifications

1.5 Acronyms

CAD	Computer Assisted Design
IO	Input / Output
PO	Purchase Order
PWB	Printed Wired Board

2 General Requirements

The following section provides precedence guidelines and general requirements for mechanical components.

2.1 Precedence

Wherever possible, design data from SAP and supplied with the PO shall take precedence over all other sources of data. **In the event of design data conflicts or omissions**, the following order of precedence shall apply:

1. The 3D Geometry (CAD source file), then
2. This document, then
3. The manufacturing (2D) drawing.

Whereas applicable, all requirements contained in this document override the requirements from the 2D drawing file available in Agile and/or SAP.

Note that this document shall not override geometrical features and/or dimensions.

2.2 Part Number Marking

All part number marking shall be in accordance with MIL-STD-130. Contrasting coloured epoxy ink is not required for the revision level. An example of a note, calling out contrasting coloured epoxy ink for the revision, is shown in the figure below. On Figure 2, the current note is provided. Note that in addition to Curtiss-Wright Cage Code, Part Number and Revision, the vendor cage code (or identifier) and lot/batch identifier is required.

ITEM IDENTIFICATION:

PERMANENTLY MARK (IN APPROX. LOCATION SHOWN) THE FOLLOWING PER MIL-STD-130:

0BYC3- 904994-000 REV (MARK CURRENT REVISION LEVEL ONLY) IN CONTRASTING COLOURED EPOXY INK

Figure 1: Sample of Part Number Marking Requirements, with contrasting coloured ink

ITEM IDENTIFICATION:

PERMANENTLY MARK IN AREA SHOWN THE FOLLOWING IN ACCORDANCE WITH MIL-STD-130;

0BYC3- 225493-002 REV (MARK CURRENT REVISION LEVEL)
VENDOR IDENTIFICATION (CAGE CODE) AND BATCH/LOT IDENTIFIER

Figure 2: Current Part Marking Requirements

2.3 Positional Tolerance of Tapped/Through Holes

The standard positional tolerance for tapped and through holes on machined metalwork is defined in the figure below. Note that the identification of the datums (A, B and C) could be different.

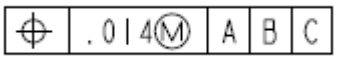

Figure 3: Standard Tolerance for Holes

In the event that a tighter tolerance is needed, the drawing will have to specifically state that this document doesn't apply. With a note to that extent is included on the drawing, the positional tolerance from the drawing shall be maintained.

2.4 Contact Marks

Contact marks (also called rack marks) are inevitable due to the nature of common finish process specified on Curtiss-Wright drawings. Due to cosmetic implications, contact marks needs to be minimized in size and limited to Class C surfaces, as defined in 819576.

Unless noted specifically on the drawing, the acceptable locations for contact marks shall be confirmed by Curtiss-Wright.

2.5 Silkscreen/Marking/Engraving Tolerance

Unless noted specifically on the drawing, the generic tolerance of +/- .005 does not apply to the following features:

- Silkscreen
- Marking
- Engraving

On the features above, a generic tolerance of +/- .020 applies to the position and geometry of these features.

2.6 Tapped Holes

2.6.1 Thread Depth

Holes tapped (e.g. threaded) to a greater depth than the value specified on the drawing is acceptable, under the circumstances that the following conditions are respected on the holes. Typical tapped hole definitions are shown in Figure 4 to Figure 5 for reference.

- There is no “MAXIMUM” thread depth value specified
- The “NO BREAK THRU” requirement is respected, as applicable.
- The required thread depth is met on the opposite side (of the same hole)
    - Note that for drilled holes with tap requirements on both sides, a “tap thru” process is acceptable, under the conditions that the resulting thread is compliant to the tap size requirements on both sides.

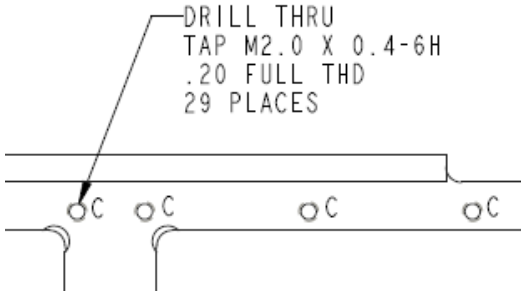

Figure 4: Hole Call-Out Example #1

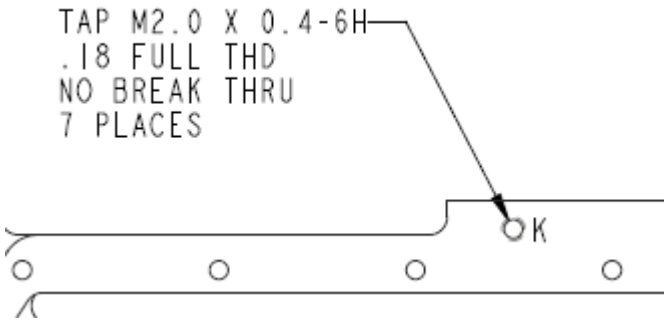

Figure 5: Hole Call-Out Example #2

2.6.2 Applicable Finish

As a general guideline, finish of the threaded holes shall be identical to the finish of the frame. For manufacturability purposes, the latest acceptable practice is to allow tapped holes with an alternate finish, compatible with the base material. See Figure 6 and Figure 7 for the latest specification applicable to aluminum and copper components. Note the inclusion of baking, prior to the application of Coricone, for copper parts.

IMPORTANT: In the event that specific finish for tapped holes are specified in the drawing views (as oppose to in the notes on first page), the allowance below shall not apply. The part shall comply to specific drawing requirement.

5. FINISH: BLACK ANODIZE IN ACCORDANCE WITH MIL-A-8625F, TYPE II, CLASS 2.
APPLY CHEM FILM TO EXPOSED BASE METAL IN ACCORDANCE WITH MIL-DTL-5541F, TYPE II, CLASS 1A.
DIMENSIONAL LIMITS APPLY AFTER COATING. SURFACE TEXTURE SPECIFICATIONS APPLY BEFORE COATING.

THREADED HOLE SPECIFICATIONS APPLY AFTER COATING. ANODIZE FREE TAPPED HOLES ARE ACCEPTABLE:
APPLY CHEM FILM TO EXPOSED BASE METAL IN ACCORDANCE WITH MIL-DTL-5541F, TYPE II, CLASS 3,
ROHS COMPLIANT.

Figure 6: Standard Black Anodize Finish Specification (Aluminum)

5. FINISH: ELECTROLESS NICKEL IN ACCORDANCE WITH ASTM-B733-04 (2009), TYPE IV, SC2, CLASS 5.
DIMENSIONAL LIMITS APPLY AFTER COATING. SURFACE TEXTURE SPECIFICATIONS APPLY BEFORE COATING.

THREADED HOLE SPECIFICATIONS APPLY AFTER COATING. NON-PLATED TAPPED HOLES ARE
ACCEPTABLE: APPLY CORICONE 1700 TO EXPOSED BASE METAL IN ACCORDANCE WITH MANUFACTURER'S
RECOMMENDATIONS AND THE FOLLOWING BAKING REQUIREMENTS.

- PRIOR TO APPLICATION, BAKE THE PART AT 300°F FOR 60 MINUTES.
- AFTER APPLICATION, OVEN CURE THE PART AT 300°F FOR 15 MINUTES.

Figure 7: Standard Electroless Nickel Finish Specification (Copper)

With the specifications above, we can expect to receive parts with "finished" tapped holes (anodize or nickel, as applicable) or "un-finished" tapped holes (chem-film or coricone, as applicable). Both are acceptable. Therefore, in the event that a drawing specifies black anodize (or electroless nickel) free tapped holes (see sample below, in Figure 8), frames with fully anodized (or electroless nickel) tapped holes shall be accepted, under the circumstances that all specific thread requirements are met (see Section 2.8).

3. BLACK ANODIZE IN ACCORDANCE WITH MIL-A-8625F, TYPE II, CLASS 2.
ENSURE TAPPED HOLES ARE FREE OF ANODIZE. APPLY CHEM FILM
TO FREE RUNNING TAPPED HOLES IN ACCORDANCE WITH MIL-DTL-5541F, TYPE II, CLASS 1A, ROHS COMPLIANT.
DIMENSIONAL LIMITS APPLY AFTER COATING. SURFACE TEXTURE SPECIFICATIONS APPLY BEFORE COATING.

Figure 8: Sample Finish Requirement with requirement for "un-finished" tapped holes"

The opposite is also true, frames with anodize-free (or electroless nickel free) tapped holes, are acceptable, even if there is no allowance for "un-finished" tapped holes on the drawing. Note that the finish requirement for the tapped holes shall be per Figure 6 (for aluminum parts) and Figure 7 (for copper parts).

2.7 Countersink Holes (CSK)

On typical drawings, the CSK holes are specified as shown in Figure 9 below. As no tolerances are included, the generic tolerance from the drawing would, in theory, apply; +/- .005" on the diameter and +/- 0.5^{o} on the angle.

However, to facilitate manufacturing and reduce cost, a new tolerance practice for the outer CSK diameter (.196" on example below) and CSK angle (90^{o} on example below) was implemented.

- For the outer diameter, the applicable tolerance shall be + .010" / -.005".
- For the angle, the applicable shall be +/- 2^{o}.

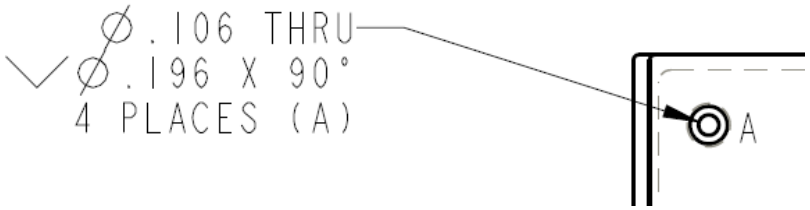

Figure 9: Typical CSK Hole Call-Out

2.8 Thread Inspection

All internal threads shall be inspected in accordance with ASME B1.3, System 21. For each thread type, a larger minor diameter is acceptable, as summarized in Table 1 below.

Table 1: Allowable Minor Diameter

Thread Type	Max Minor Diameter (Spec)	Allowable Max Minor Diameter
M2 x 0.4	.0661	.068
M2.5 x 0.45	.0841	.086
M3 x 0.5	.1023	.104

3 Specific Requirements

The following section provides requirements for specific design and/or assembly features of mechanical components.

3.1 Front Panel Silkscreen

Front panel silkscreen is used on mechanical parts to provide product information to any product users. This information could be, but not limited to, functional parameters (LED, IO Connectors, etc.), product information (Product Name, Type, etc.) and branding (Curtiss-Wright Logo). The following silkscreen is approved for use on Curtiss-Wright Products.

3.1.1 Black Anodize Aluminum

On this substrate, white epoxy ink silkscreen is the standard practice. Silkscreen shall be performed in accordance with A-A-56032D-1-WHT.

3.1.2 Nickel Finish, Copper or Aluminum

On these substrates, black epoxy ink silkscreen is the standard practice. Silkscreen shall be performed in accordance with A-A-56032D-1-BLK.

3.2 Front Panel Assembly Kit

Front Panel Assembly is used on most Curtiss-Wright air-cooled products. Typical assembly consists of a specific product panel (machined and marked as required), an EMC gasket, handles (1 or 2) and miscellaneous hardware. The following requirements apply to all front panel assemblies purchased by CW for use on air-cooled products. Unless a specific torque and/or threadlocker are specified on the drawing, the following requirements apply to the assembly.

- All screws used in the assembly of handles or PWB holders, on the front panel, shall be installed with threadlocker (Loctite 222MS or equivalent) and torqued to 4 in-lbs.
    - 6U Front Panels; see screw Item 5 (Qty2) in Figure 10.
    - 3U Front Panel; see screw Item 6 (Qty1) and Item 7 (Qty1) in Figure 11.
- All screws used in the finished assembly shall be with Philips-Head.
    - Pan Head or Cheese Head screws are both acceptable.
- A vinyl cap shall be installed on each shoulder screw, as shown in Figure 12.
    - Argon Part Number VC080-0250 or equivalent. Color may differ.
    - 6U Front Panels; see screw Item 6 (Qty2) in Figure 10.
    - 3U Front Panel; see screw Item 8 (Qty2) in Figure 11.
- Front Panel, prior to product specific machining, shall be Clear Anodize, in accordance with MIL-A-8625, Type II, Class 1.
    - Note that post-machining finish is detailed on the part drawing.

- Aluminum grade for Front Panel Extrusion shall be 6060, 6061 or 6063.
    - Acceptable tempers are T5x and T6xxx.
    - Note profile variation, from released drawing, may be acceptable. See Section 3.2.1 for further details.
- The EMI gasket shall be secured to the front panel extrusion using a mechanical punch; maximum diameter of .125”. Multiple punches, distributed evenly across the length of the front panel, is required.
    - 6 punches for 6U
    - 4 punches for 3U

In the event that a torque and/or threadlocker is specified on the drawing, the specification on the drawing shall take precedence over the requirements outlined in this section.

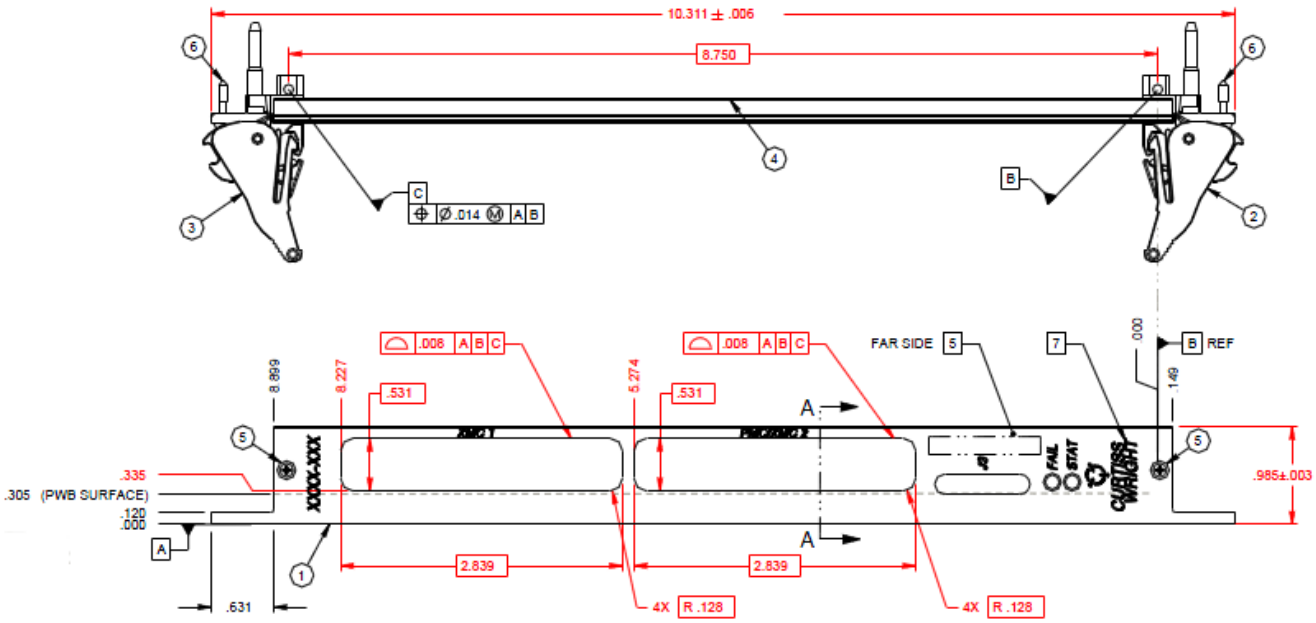

Figure 10: Typical CW 6U Front Panel

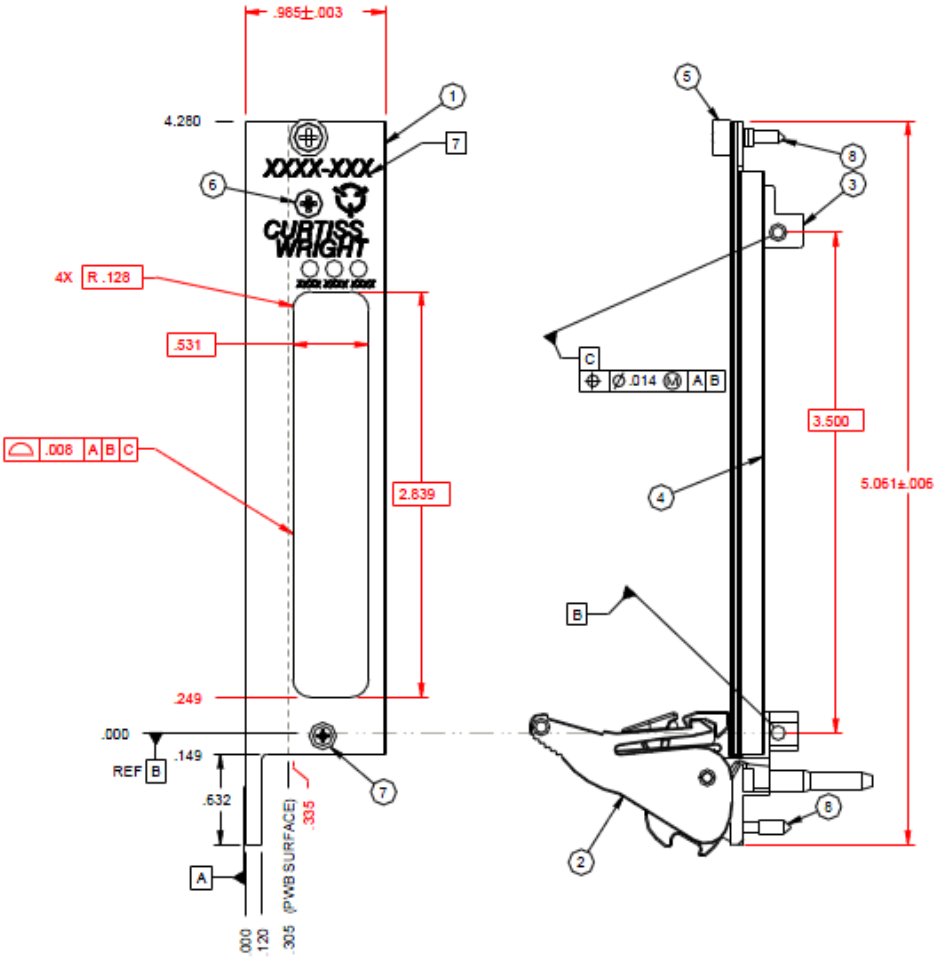

Figure 11: Typical CW 3U Front Panel

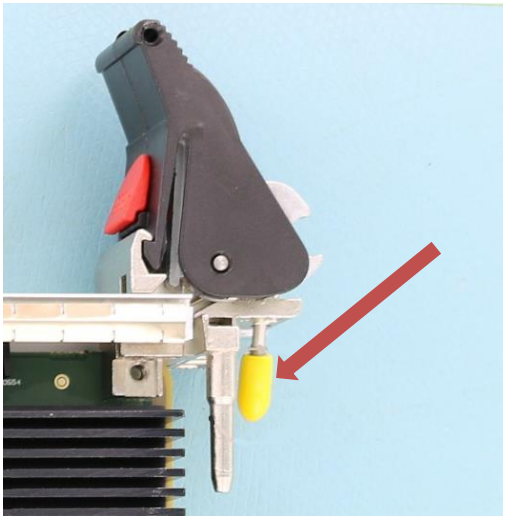

Figure 12: Shoulder Screw Cap

3.2.1 Alternate Front Panel Extrusion Profile

Some vendors may use an extrusion that is slightly different than the extrusion used by Mechanical Engineering, when creating new front panel assemblies. The difference are minor and do no impact the fit-form-function of the front panel, for applications within 4HP and 5HP chassis. The acceptable alternate profile are shown in the Figure 13 and Figure 14.

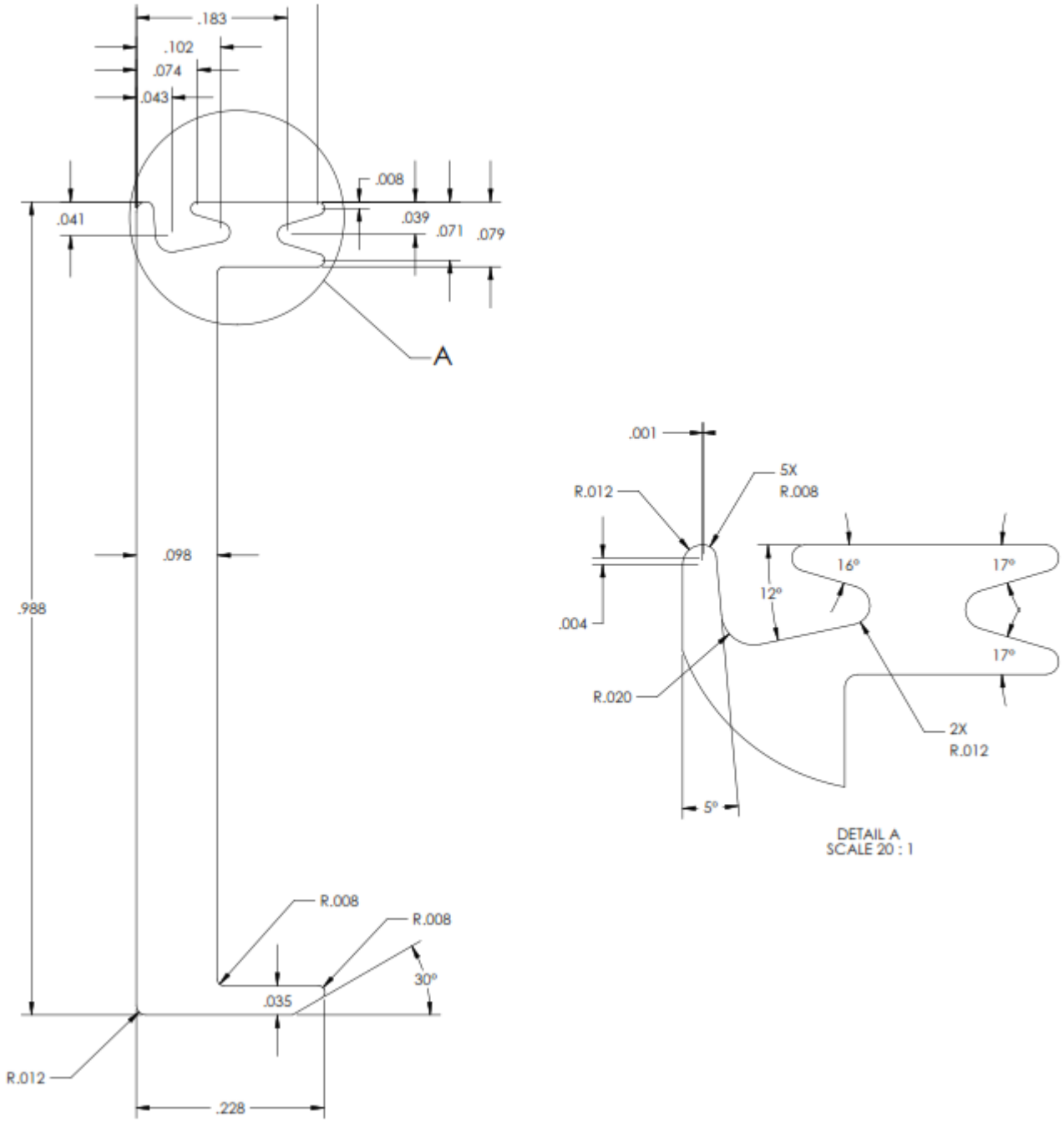

Figure 13: Alternate Front Panel Extrusion Profile (5HP)

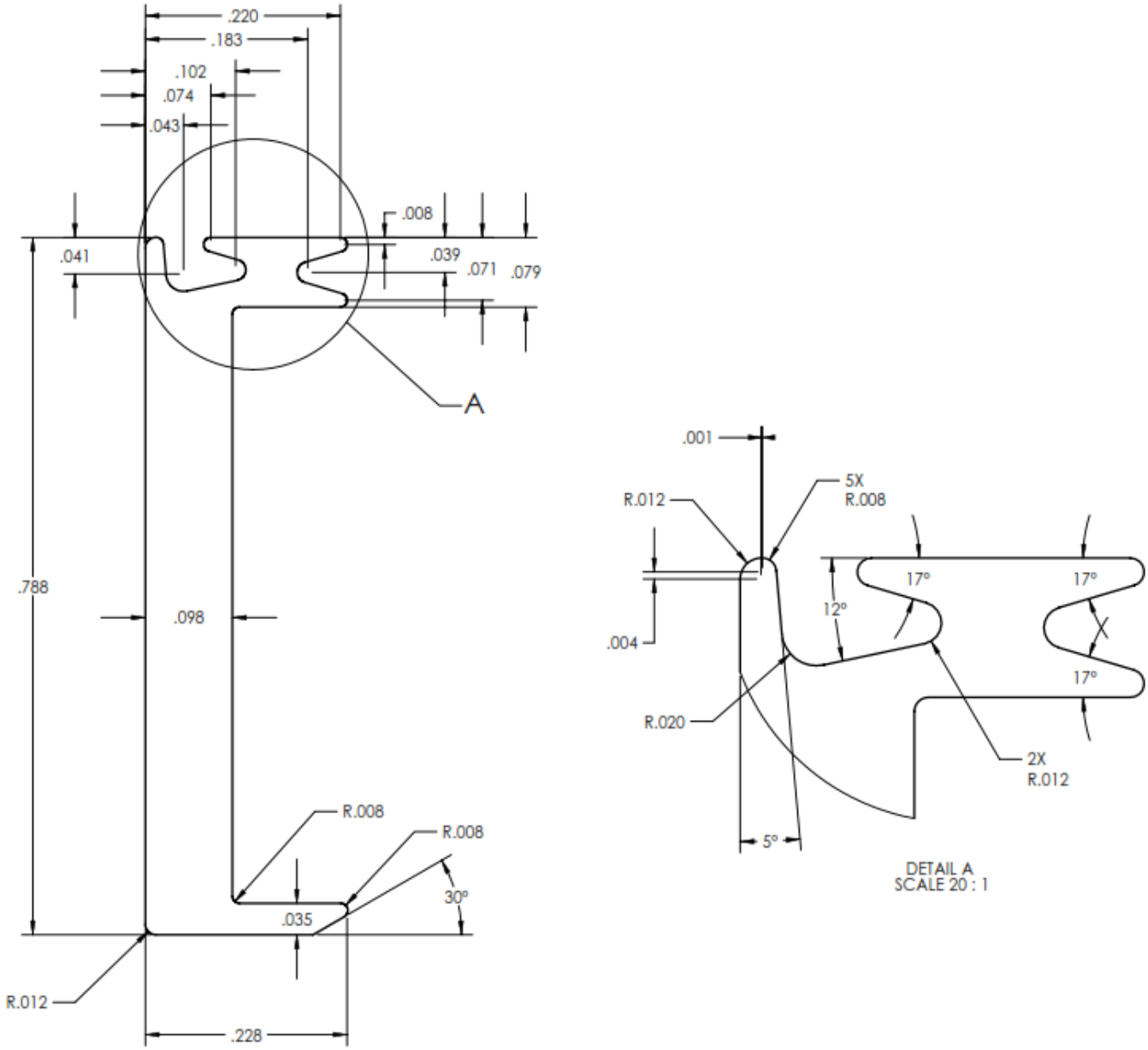

Figure 14: Alternate Front Panel Extrusion Profile (4HP)

3.3 Electroless Nickel Finish

Electroless Nickel is the standard finish for mechanical components manufactured from copper. While not standard practice, it is also possible that electroless nickel is specified for aluminum parts. Over time, the nickel finish requirements have evolved at Curtiss-Wright. It is possible that on some parts, the finish requirement is not up to the latest standard.

The following finish requirements apply for mechanical components where **electroless** nickel finish is specified on the manufacturing 2D drawing.

- **For Copper:** ELECTROLESS NICKEL IN ACCORDANCE WITH ASTM-B733-04 (2009), TYPE IV, SC2, CLASS 5.
- **For Aluminum:** ELECTROLESS NICKEL IN ACCORDANCE WITH ASTM-B733-04 (2009), TYPE IV, SC2, CLASS 4.

NOTE: For very specific applications, Class 4 or Class 5 is acceptable. However, this will be specified directly on the drawing.

3.4 Requirements for Heatpipes

When heatpipes are specified on the drawing, the following requirements apply.

3.4.1 Material and Type

Unless noted otherwise on the drawing, all heatpipes shall be made of copper with a sintered powder wick and water charge.

Unless noted otherwise on the drawing, heatpipes shall be installed in the metalwork with eutectic Sn/Pb solder.

Unless noted otherwise on the drawing, the solder selected for heatpipes installation shall have a minimum reflow temperature of 135^{o}C.

3.4.2 Structural Integrity

Unless noted otherwise on the drawing, the nominal wall thickness of the heatpipes shall be:

- 0.5mm or 0.3mm when the heatpipes are not machined in the manufacturing of the parts
- 0.5mm when the heatpipes are machined to meet the drawing requirements.

In the event that heatpipe machining is required to meet the drawing requirements, the material removed shall represent a maximum of 25% of the initial wall thickness.

Unless approved by Mechanical Engineering or specified in the drawing, the geometry of the metalwork (where the heatpipes are installed) shall not be altered to meet the machining requirements.

3.4.3 Voiding

A generic voiding specification is no longer available. Specific voiding requirements are defined according to the features of a given part. Each soldered region are defined with a voiding classification, as listed below. The regions are identified directly in the 2D drawing for the specific part.

CLASS V1 MAXIMUM SIZE OF ANY SINGLE VOID IS TO BE 1MM. MAXIMUM VOIDING/RECESSES BY AREA SHALL BE LESS THAN 10% OF THE REGION INDICATED.

CLASS V2 MAXIMUM SIZE OF ANY SINGLE VOID IS TO BE 2MM. MAXIMUM VOIDING/RECESSES BY AREA SHALL BE LESS THAN 20% OF THE REGION INDICATED.

CLASS V1 MAXIMUM SIZE OF ANY SINGLE VOID IS TO BE 5MM. MAXIMUM VOIDING/RECESSES BY AREA SHALL BE LESS THAN 40% OF THE REGION INDICATED

3.4.4 Operating Performance

3.4.4.1 New Vendor Approval

In addition to the new vendor requirements from Supply Chain, the performance characteristics for the heatpipes, prior to assembly into the metalwork, shall be reviewed and approved by a representative from Mechanical Engineering. A review of the operating performance of the heatpipes is critical to ensure that the requirements of the end product are met. In addition to the performance characteristics, the performance test procedure or method shall be reviewed and approved by Mechanical Engineering.

When reviewing and approving a new heatpipe supplier, Mechanical Engineering must validate that their heatpipes can meet the same requirements applicable to Curtiss-Wright products (temperature variation, vibration, shock, etc.).

3.4.4.2 Performance Testing

Performance testing is required of 100% of the heatpipes used in the assemblies. Testing shall be performed in order to ensure that each heatpipe meets the approved performance characteristics. A summary of the test results shall be provided with each delivered lot. Note that performance testing is required on the heatpipes prior to bending, flattening and assembly into the metalwork.

3.5 Black Hard Anodize

Black Hard Anodize finish is typically used on mechanical components where additional wear resistance and/or electrical insulation properties are required. The latest standard note for this finish is shown in Figure 15. It is possible that on some parts, the finish requirement is not up to the latest standard. The finish requirement provided below applies to all parts where black hard anodize is specified.

BLACK HARD ANODIZE IN ACCORDANCE WITH MIL-A-8625F, TYPE III, CLASS 2.
COATING THICKNESS TO BE 0.002 ± 20% AS PER MIL-A-8625F.
SEAL ANODIZE IN ACCORDANCE WITH MIL-A-8625F.
APPLY CHEM FILM TO EXPOSED BASE METAL IN ACCORDANCE WITH MIL-DTL-5541F, TYPE II, CLASS 1A. DIMENSIONAL LIMITS APPLY AFTER COATING. SURFACE TEXTURE SPECIFICATIONS APPLY BEFORE COATING.

Figure 15: Standard Black Hard Anodize Note

4 Source of Supply Requirements and Alternatives

The following section defines requirements and alternatives for specific mechanical components and raw materials.

4.1 C11000 H04 Temper

The standard drawing practice, when C11000 copper is required, is to only specify the alloy in the notes, as such: COPPER ALLOY C11000.

However, in some drawings, additional details may be provided, such as the type of temper. In the event that H04 temper (full hard) is specified for C11000, it is allowed to use raw materials specified to have a H02 temper (half hard).

Note that this change in temper is actually not a change of materials, but a change at the ASTM B187/187M level. In the latest revision of this specification (-11), the temper nomenclature has changed from H04 to H02 for copper bars and rods (rectangle, hex, square, angle, channels and custom).

4.2 Aluminum Alloy 6061-T6, -T651 or T6511

Latest metalwork drawing note standard is to include all variances of aluminum alloy 6061 as material specification. It is possible that for some parts, only one (or two) of these grades is specified. These aluminum alloy grades are interchangeable.

ALUMINUM ALLOY 6061-T6:	6061-T651 or 6061–T6511 can be used as a replacement
ALUMINUM ALLOY 6061-T651:	6061-T6 or 6061–T6511 can be used as a replacement
ALUMINUM ALLOY 6061-T6511:	6061-T6 or 6061–T651 can be used as a replacement

Note that the use of the UK equivalent aluminum grade, 6082, instead of 6061 is allowed.

4.3 Aluminum Alloy 6082-T6, -T651 or T6511

Latest metalwork drawing note standard is to include all variances of aluminum alloy 6082 as material specification. It is possible that for some parts, only one (or two) of these grades is specified. These aluminum alloy grades are interchangeable.

ALUMINUM ALLOY 6082-T6:	6082-T651 or 6082–T6511 can be used as a replacement
ALUMINUM ALLOY 6082-T651:	6082-T6 or 6082–T6511 can be used as a replacement
ALUMINUM ALLOY 6082-T6511:	6082-T6 or 6082–T651 can be used as a replacement

Note that the use of the US equivalent aluminum grade, 6061, instead of 6082 is allowed.

4.4 Aluminum Alloy Materials Form

In the standard drawing practice, the form of the raw material (plate, bar, sheet, etc.) is not specified on the drawing. The intent is to not over constrain the vendors in acquiring the raw materials specified in our drawing.

However, Aluminum Alloy Materials 6061-T6, 6061-T651 or 6061-T6511 shall conform to one of the following material specifications:

- AMS QQ-A-250/11
- AMS QQ-A-225/8
- AMS QQ-A-200/8
- ASTM B209
- ASTM B211

4.5 Front Panel Mezzanine Bezel

Front Panel Mezzanine Bezels are used on most Curtiss-Wright air-cooled products; host cards and mezzanines. The Curtiss-Wright Part Number for this bezel is 173129-502. These bezels are purchased, as assembled component, directly from the vendor. They typically include an aluminum front panel and an EMI O-ring. In some applications, the bezel is machined and marked per product specific requirements. The table below lists the approved suppliers for this bezel. These vendors are to be used by Curtiss-Wright and its approved vendors, when making custom mezzanine bezels.

Table 2: Approved Source of Supply for Mezzanine Bezel (PN 173129-502)

Cage Code	Part Number	Name and Address
62559	20835-598	Schroff / Pentair 170 Commerce Drive Warwick, RI 02886
1KT37	PMC 3000-007[1]	Phillips Components, Inc. 23142 Alcalde Drive, Suite A Laguna Hills, CA 92653

Notes: 1. Part Number PMC 3000-001 is also acceptable to use under the conditions that it needs to be finish in accordance with MIL-DTL-5541F, Type II, Class 3, RoHS Compliant.

4.6 Phase Change Material

Phase change material is used in various forms on several Curtiss-Wright products. The material is cut-to-size, per the drawing, to fit a given product application.

4.6.1 Raw Material Specification

The phase change material used has been re-branded. In the event that the drawing is still specifying the old material, the new material identified below is considered an equivalent and shall be accepted as is.

Phase Change Material Description changed:
From:
POWERSTRATE EXTREME (PSX) .008 THICK PHASE CHANGE. – HENKEL.

To:
LOCTITE TCF 4000 PXF-8

4.6.2 Applicable Manufacturing Tolerances

It is possible that on drawings, the general manufacturing tolerance specified is +/- .005 or +/- .010. Based on the material nature and manufacturing process, such tolerance is nearly impossible to meet. New part drawings are created using a general tolerance on the geometry of +/- .020". Therefore, existing part can be manufactured to this tolerance, ignoring the tolerance specified on the actual drawing.

IMPORTANT NOTE: The +/- .020 tolerance allowance does not apply to the thickness of the material.

4.7 Thermal Gasket Material

Thermal gasket material is used in various forms on several Curtiss-Wright products, mainly conduction-cooled products. The material is cut-to-size, per the drawing, to fit a given product application. The material used for several years has been discontinued by the manufacturer. An alternate material was validated as a fit-form-function compatible replacement for this application. Refer to 844433 for details on this validation.

When the discontinued material is specified on the drawing, the vendor can use the replacement material instead.

Discontinued Material
Fujipoly 20GSR, with or without adhesive backing (-AD)

Replacement Material
Fujipoly 20GAR, with or without adhesive backing (-AD)

5 Training Requirements

5.1 Who is required to be trained on this procedure

- All Mechanical Engineering staff
- All Manufacturing Engineering staff
- All Quality Engineering staff
- All Incoming Inspection staff
- All Purchasing Staff

5.2 What is the method of training

- First Training: Training to be given by the Mechanical Engineering Team Lead or designate via meeting and/or webinar
- Subsequent Training: Review of Document through Cornerstone or Equivalent Training System.

5.3 When is retraining required

- Upon material change in revision.

5.4 What is the Method of Assessment (Test, Observation, Interview)

- Observation

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