TABLE OF CONTENTS

1   PURPOSE

1.1   To provide procedural guidelines for creating materials which will be painted either by MTS or an outside vender.

2   SCOPE

2.1   The guidelines outlined in this document will help engineers, designers, buyers, and manufacturing engineers to determine the best process and source of a painted part as well as provide guidance on how to document painted parts.
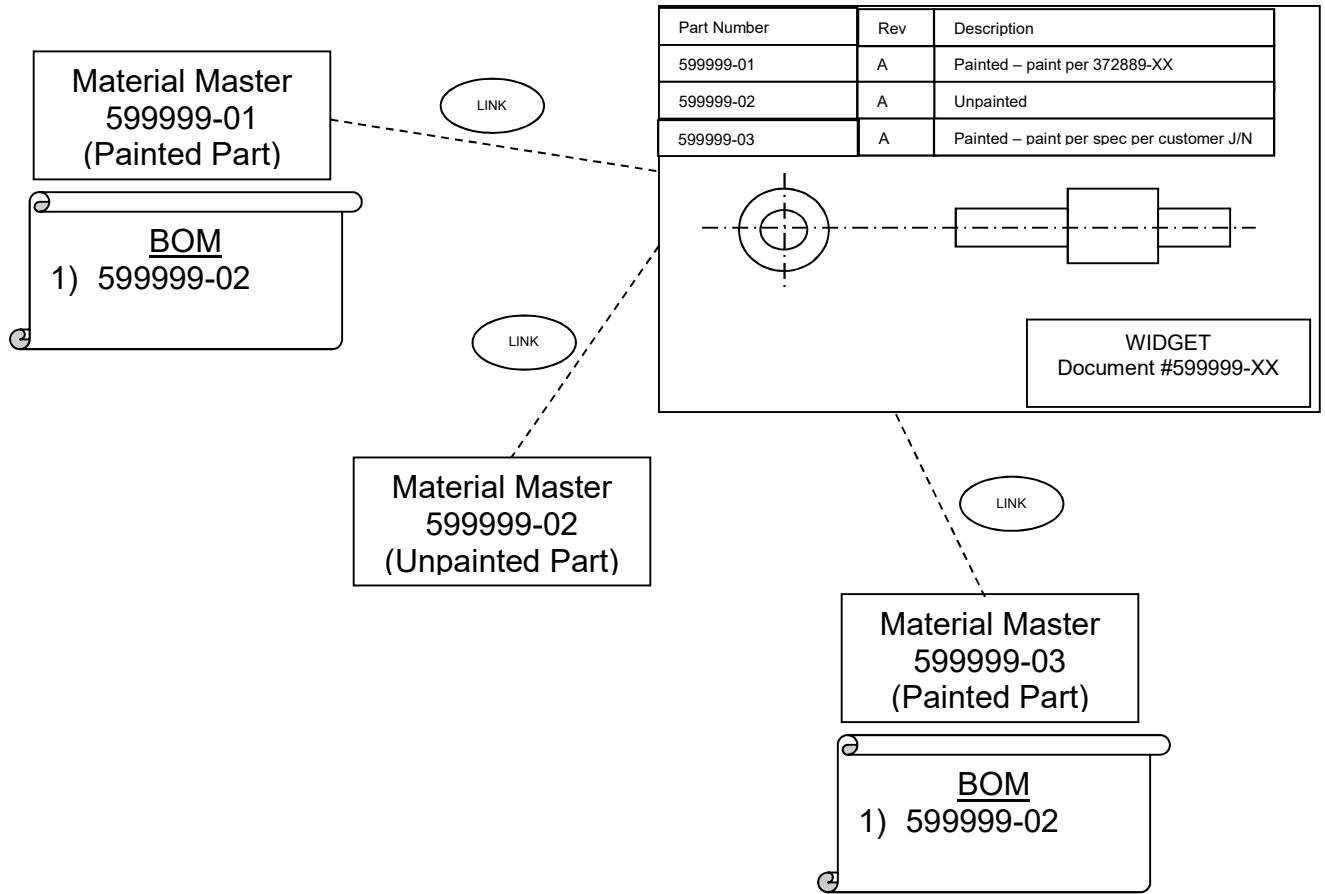
3   DEFINITIONS AND ACRONYMS

3.1   BOM = Bill of Material

3.2   HALB = Semi Finished Product

3.3   Value Added = typically describes a process whereby value is added to an existing part through subsequent processing

	QMS Procedure	Document Number: ___	Rev.: **B**
MTS	**MTS Systems Corporation – MTS Test**		
Title:	**Painted Part Procedure**	Page #: **2 of 6**	
Procedure Owner(s) – list functions: **Engineering**		Revision's Training Requirements – select one (per section #9): **Awareness _ Formal X**	

4   GRAPHIC

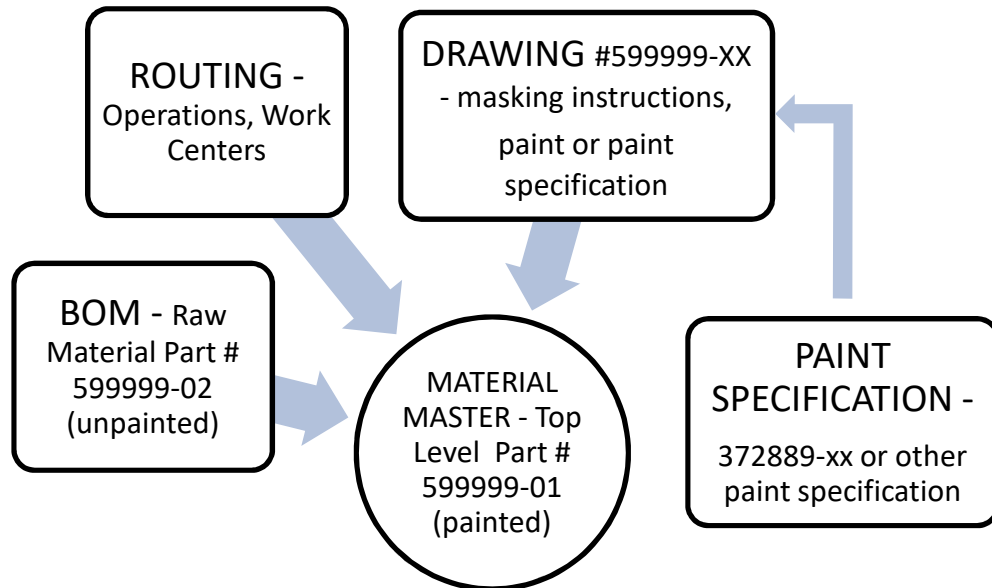Example of painting a purchased, fabricated part

Note: This drawing is coded as a document on SAP

Material Master
599999-01
(Painted Part)

BOM
1) 599999-02

LINK

Part Number	Rev	Description
599999-01	A	Painted – paint per 372889-XX
599999-02	A	Unpainted
599999-03	A	Painted – paint per spec per customer J/N

WIDGET
Document #599999-XX

LINK

Material Master
599999-02
(Unpainted Part)

LINK

Material Master
599999-03
(Painted Part)

BOM
1) 599999-02

DRAWING EXAMPLE

PART NUMBER	REV	DESCRIPTION	APPVL	DATE
458361-03	D	PAINTED PART - PAINT DYNAMIC PER MTS 437074-XX PER CUSTOMER JOB NUMBER	JCG	2-07
458361-02	F	PAINTED PART - PAINT DYNAMIC PER MTS 372889-25 (YELLOW POLYURETHANE)	JWD	9-88
458361-01	F	MACHINED PART-NO PAINT	JWD	9-88

UNLESS OTHERWISE SPECIFIED

POSSESSION OF THE RECIPIENT.

MATERIAL DESCRIPTION
ALUM 2024-T351

MATERIAL SIZE

FINISH
SEE TAB

.XXX HOLE SIZE TOLERANCE

	0.000 TO .750 +.010/-.002	OVER .750 TO 1.500 +.015/-.003

DRAWN JWD	CHECK JWD	ENGR JWD	MFG -
DATE 9-89	DATE 9-89	DATE 9-89	DATE -

ANGLE ±2°

GENERAL TOLERANCES
X/Y ±1/4
.X ±.1
.XX ±.03
.XXX ±.010

MASK

SCALE NONE

MACHINED SURFACES 180√

• THREAD DEPTHS ARE TO MIN FULL THDS
• DRILL DEPTHS ARE TO FULL DIA
• REMOVE BURRS AND SHARP EDGES
• DO NOT SCALE PRINT

TITLE
HOUSING BUSHING - MACHINED VERSION

NEXT LEVEL

PRODUCT CODE

SIZE D	NUMBER 458361-XX	REV F
	SHEET 1 OF 1	

MTS MTS SYSTEMS CORPORATION
EDEN PRAIRIE, MINNESOTA U.S.A. ®

THIRD ANGLE PROJ

ROUTING - Operations, Work Centers

DRAWING #599999-XX - masking instructions, paint or paint specification

BOM - Raw Material Part # 599999-02 (unpainted)

MATERIAL MASTER - Top Level Part # 599999-01 (painted)

PAINT SPECIFICATION - 372889-xx or other paint specification

5   RESPONSIBILITIES

5.1   Engineer: Develops parts and determines their finished appearance.

5.2   Designer: Designs parts and defines the paint required.

5.3   Procurement: Determines the vendor source and costing of purchased parts.

5.4   Manufacturing Engineer: Determines the operations required to process parts manufactured at MTS.

6   PROCEDURE

6.1   The following parameters will be used to determine whether a part can be painted at MTS and should be documented using paint tabs:

6.1.1   Maximum size: 8' x 5' x 5' (L x W x H)

6.1.2   Maximum weight: 5000 lbs

6.1.3   The part must be able to fit on an MTS skid and be fork lift accessible.

6.2   If a part fits the parameters in section 6.1, it may be painted in-house at MTS. In this case, paint tabs must be used. Engineering will create a raw material part number, a finished part number, and a BOM. The finished part number shall be a manufactured HALB type. Manufactured HALBs have a BOM for

specifying raw material and a routing for specifying required operations. The raw material will be purchased by Procurement.

6.3   If a part <u>does not</u> fit the parameters in section 6.1, it may be purchased complete and painted by an external supplier. In this case, the part can be documented either with paint tabs <u>or</u> as a single part number. Before using a single part number to document a painted part, Engineering should verify with Procurement that the part will be purchased complete to avoid having to re-document the material with paint tabs. If a single part number is used, no BOM is required. The part will be purchased by procurement fully painted.

6.4   If a part is documented with paint tabs, but is ultimately painted by an external supplier, Procurement will purchase the top-level painted part. No change in documentation is required by Engineering.

6.4.1   Procurement will provide the supplier with the paint specification for the part.

6.5   The diagram in section 4 shows an example of how to document with paint tabs. This example involves three material numbers. One number is for a raw, un-painted part. The other two are for painting this part two different ways. One is a painted part per 372889-XX, explicitly called out as a standard color. The other, optional material is only necessary in instances where the part might be painted a variety of non-standard colors that changes with the project number. The material numbers share a common drawing that is identified in SAP as a "document".

6.5.1   A painted part will be assigned a part number (in our example: 599999-01, and optionally -03).

6.5.2   A painted part will have a BOM which calls out a raw material part number (in our example: 599999-02).

6.5.3   An unpainted part is created as a purchased HALB.

6.6   A top level, painted part will have a drawing titled according to the following format (599999-XX) which will reference the -01, -02, -03… part numbers and the specific paint to be used or refer to a paint specification sheet.

6.6.1   A paint specification sheet (e.g. 583107-XX) is a tabulated drawing created by Engineering that lists paint specs to be used to paint parts for a specific job or project.

6.6.2   Engineering will update the paint specification sheet with the correct job or project number and corresponding paint spec prior to release.

6.6.3   Engineering must notify the paint shop at the time of release whenever a paint spec is specified that is not captured on 372889-XX (i.e. RAL XXXX). This ensures that the paint is available when needed and that MTS has the proper equipment to process the paint as specified.

6.6.4   Note: Every effort should be made to use paint tabs which explicitly refer to a paint color (i.e. paint per 372889-16) rather than referencing a project number.

6.7   Existing products/documentation

6.7.1   Engineering groups should review existing documentation and update if necessary. For products which repeatedly use the same paint spec, Engineering should ensure that the paint spec is explicitly stated on the drawing rather than referencing a separate document. If you find that you are commonly asking for the same paint spec on every project, paint tabs should be added to your parts which ask for that paint spec explicitly.

7   ASSOCIATED QUALITY RECORDS – AS STATED IN THE QUALITY RECORDS LIST

Required Record
N/A

8   REFERENCE FORMS / TEMPLATES / DOCUMENTS

Form / Template / Document Title	Location

9   CURRENT REVISION'S TRAINING REQUIREMENTS

Training requirements are determined by the document owner – either awareness or formal.

Select One (mark X)	Training Type	Training Definition
	Awareness	Awareness training is conducted by communication, which is sent/delivered by the approver/author/owner of the document to the affected employees/groups.
X	Formal	Formal training requires the approver/author/owner to collect/store evidence that the affected employees/groups were trained.

Affected groups are Mechanical Engineering and Procurement

10   REVISION HISTORY & APPROVAL

REVISION HISTORY			
Rev	Description of Change	Author	Effective Date
A	Process written	Rick Howard	8/1/11
B	Several updates. Updated for "paint per customer J/N" information. Provided new guidance for when not to use paint tabs. Instruction to inform paint when special paint used.	Jesse Gunderson	4/7/2020

APPROVAL OF CURRENT REVISION		
Name / Function	Signature	Date
Marvin Westermann	*Marvin D. Westermann*	4/13/2020