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### 1 PURPOSE


- 1.1 The purpose of this work instruction is to provide instructions for checking engineering documentation to reduce documentation errors.

### 2 SCOPE – APPLIES TO WHERE & WHEN THE WORK INSTRUCTION IS USED

- 2.1 This instruction applies to all engineering Bills of Materials, drawings, specifications and any other supporting documentation for use in procuring, fabricating, building, installing, and maintaining MTS products. This work instruction is not intended to replace design reviews or detailed technical design work.

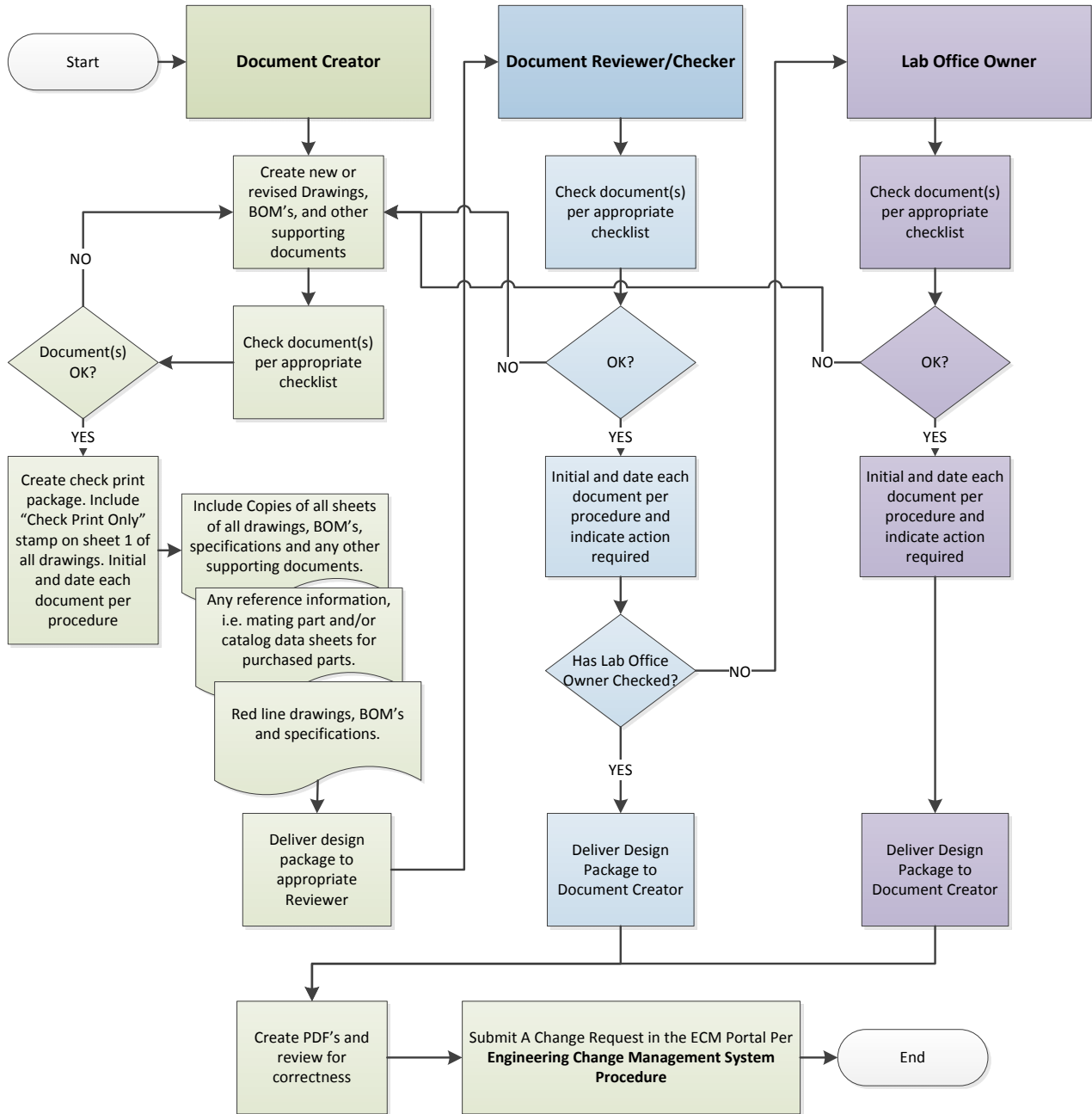
### 3 DEFINITIONS AND ACRONYMS (IF NEEDED)


- 3.1 **BOM** = Bill of Materials
- 3.2 **DOD** = Documents on Demand
- 3.3 **CHECK** = Independent reviewer of documents.
- 3.4 **DRAWN** = Indicates who created the document.
- 3.5 **ENGR** = Indicates the engineer whose lab/office is associated with the document being created.
- 3.6 **Redline** = Document marked up showing changes to the document.
- 3.7 **As-Built Documentation** = Engineering documentation with approved changes to the

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baseline configuration of the product during manufacturing processes or during install.  
See [Submitting As-Built Engineering Changes from MTS Manufacturing \(W.I.\)](#).

**4 GRAPHIC (IF NEEDED)**




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## 5 RESPONSIBILITIES

- 5.1 Document Creator
  - 5.1.1 Creates new documents.
  - 5.1.2 Completes updates and/or redlines noted by the reviewer.
- 5.2 Document Reviewer/Checker
  - 5.2.1 Checks document(s) per checklists.
  - 5.2.2 Initials and dates each document per procedure and indicates action required.

## 6 INSTRUCTION

- 6.1 General Requirements:
  - 6.1.1 The instruction should be followed for all new documentation and when changing existing documentation.
  - 6.1.2 All drawings, BOM's, specifications and supporting documentation will be checked and approved by at least two individuals (the document creator counts as one). One of these individuals **must be the engineer** whose lab office will be associated with the document.
  - 6.1.3 Consult with manufacturing engineering when appropriate.
  - 6.1.4 Check prints/redlines will not be maintained once documents are signed and dated electronically by the document creator and submitted to configuration control (ERC). The submitted documents are now the controlled documents.
  - 6.1.5 The print package can be digital or hard copy.
  - 6.1.6 The document checking can be completed by hard copy or digitally.
- 6.2 **Document Creator:** Engineers, designers, and drafters may all be responsible for creating new and revised drawings, BOM's and other supporting documentation.
  - 6.2.1 Each document will be thoroughly checked by the document creator. Use the checklists below.
  - 6.2.2 After the document creator has thoroughly checked their own work and corrected any mistakes, they will make a check print package. The print package will include:
    - 6.2.2.1 Copies of all sheets of all drawings, BOM's, specifications and any other supporting documents.
    - 6.2.2.2 Any reference information, i.e. mating part and/or catalog data sheets for purchased parts (if applicable).

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6.2.2.3 Red line drawings, BOM's and specifications.

6.2.3 The following are examples of check print stamps (digital or ink) that will be applied to the first sheet of each drawing, There may be slight variations to these check print stamps depending on the applicaton or drawing group.

<b>CHECK PRINT ONLY</b>			
(REFERENCE ONLY)			
(SIGN-OFF INITIALS)			
INIT	DATE		
DFT			
CHK			
ENG			
UPDATE	<input type="checkbox"/>		
RELEASE	<input type="checkbox"/>		
	DFT	CHK	ENG
TITLE BLOCK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CHECK DIM./GEO. TOL.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LIFT HOLES/WGT NOTE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BOM/PAINT/RAW MAT./-02 &-01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HOLE SIZE/LOCATION/THD PITCH	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MASK FLAGS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WELD SYM/NOTES/STRESS REL.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PORT/CAVITY LOCATION CALL OUT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PARTS**

<b>CHECK PRINT ONLY</b>	
(REFERENCE ONLY)	
DRAWN INITIALS: _____	DATE: _____
CHECK INITIALS: _____	DATE: _____
ENGR INITIALS: _____	DATE: _____
<input type="checkbox"/> UPDATE	<input type="checkbox"/> RELEASE


6.2.3.1 The Document Creator should initial in the DFT / DRAWN line along with the date.

6.2.3.2 If the engineer is the document creator, they should also initial and date the ENG / ENGR line.


6.2.4 Once this check print package is completed, the document creator will deliver it to an appropriate reviewer.

6.2.5 When returned from the reviewer and updates are required, the document creator:

6.2.5.1 Makes the changes per the Redlines and re-checks per the checklist.

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- 6.2.5.2 Note: highlight the reviewer's original redline corrections as they are completed to ensure that the changes have been completed and verified.
- 6.2.5.3 After re-checking, the document creator makes new copies of the corrected documentation, applies the check print stamp to the first page of each document, and initials and dates the DRAWN boxes.
- 6.2.5.4 Once the package is completed, the document creator will return the check print package to the appropriate reviewer along with previous Redlines.
- 6.2.6 When all appropriate checks have been completed and initials and dates applied, the document creator creates final PDF's of the drawings and reviews them for correctness.
- 6.2.7 The document creator submits a change request in the ECM portal per [Engineering Change Management System Procedure](#).
- 6.3 **Document Reviewer:** The reviewer will then thoroughly review each document, or redline markup using checklists.
  - 6.3.1 Highlight each item checked as good and mark-up, in red, areas that need to be updated or corrected to ensure a thorough review.
  - 6.3.2 Once the review is completed, the reviewer will check the appropriate action box in the check print stamp:
    - 6.3.2.1 **Update** – Update/Correct all redlines and return new document to reviewer along with redline markup.
    - 6.3.2.2 **Release** – No corrections required. Document is ready to release.
    - 6.3.2.3 **Update & Release** – Make minor corrections per redlines and release. No additional review by the reviewer is required unless other changes are made.
  - 6.3.3 The reviewer initials and dates the check print stamp and returns the check print package to the document creator. If the reviewer is the engineer, they should use the ENGR box. If the reviewer is someone other than the engineer, they should use the CHECK box.
  - 6.3.4 Repeat steps 6.3-6.3.3 for each BOM, drawing or associated document.
  - 6.3.5 If minor or no changes are required, and no further reviews are required, proceed to step 6.2.4 (Document Creator).

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## 6.4 Piece Part Drawing Checklist

### TITLE BLOCK

- “Title” - See QMS Work Instruction #0219.
- “Rev” - Latest revision.
- “Source/Ref Drawing” - List all reference P/N’s.
- “Scale” - Include drawing scale Or “None”.
- “Material” - Fill in material or ref a flag note.
- “Material size” - Fill in size, “See drawing ”or “None”.
- “Finish” - Fill in the finish or reference a flag note.
- “General Tolerances” - Review default tolerances to ensure they meet the design requirements.

### DIMENSIONAL SPECIFICATIONS

- *Bulk size* - Define the appropriate tolerances (i.e. manifold thickness, sheet metal thickness).
- *Features* –
  - Coordinate locations are defined with the appropriate tolerances.
  - Feature dimensions are driven from the solid models, when appropriate, and are defined with the appropriate tolerances (i.e. hole diameter and depth).
- *Surface finish* - Special surface finishes specified on areas of drawing that are not controlled by the title block finish

### CLARITY


- *Overall views* -Do the views convey the design intent?
- *Isometric views* - One 3-D isometric view recommended.
- *Detail/Section views*
  - Include enough views to convey areas of importance.
  - Complicated port details.
  - Broken out sections.

### PROCESSING & HANDLING INFORMATION

- *Manufacturing instructions*
  - -Include special instructions, as required.
  - -Special tools, cutter callout w/location.
  - -Procedures defined (i.e. Nylon procedure).
- *Lifting instructions* –
  - Include notes specifying lifting locations, methodology (i.e. Spreader bars, thread size and depth).
  - Conforms with latest Revision of Design for Lift & Move W.I.
- *Weight* –
  - Include weight of part.
  - Recommended for all parts.
  - Required for all greater than 30 lbs.
- *Turning centers* - Permissible and/or size & location defined with appropriate tolerances, as required.
- *Symbolism* - Correct symbols are used according to Standard (i.e. GD&T, Welds, ISO, etc.).

### GENERAL

- Masking notes per Part Masking Process.
- Add job # to paint spec drawing/value-added tab (see painted part procedure), if required.
- Verify all Part Numbers on Drawings match all Part numbers on BOMs and vise versa.

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<p>Work Instruction Owner(s) – list Functions: <b>Engineering</b></p>		<p>Revision's Training Requirements – select one or both (per section #9): <b>Awareness _ Formal X</b></p>	

## 6.5 Solid CAD Model (Limited Dimension Drawing) Checklist

### TITLE BLOCK

- “Title” - See QMS Work Instruction #0219.
- “Rev” - Latest revision.
- “Source/Ref Drawing” - List all reference P/N’s.
- “Scale” - Include drawing scale Or “None”.
- “Material” - Fill in material or ref a flag note.
- “Material size” - Fill in size, “See drawing ”or “None”.
- “Finish” - Fill in the finish or reference a flag note.
- “General Tolerances” - Review default tolerances to ensure they meet the design requirements.

### DIMENSIONAL SPECIFICATIONS

- *Bulk size* - Define the appropriate tolerances (i.e. manifold thickness, sheet metal thickness).
- *Features* –
  - Feature dimensions are driven from the solid models, when appropriate, and are defined with the appropriate tolerances (i.e. hole diameter and depth).
- *Surface finish* - Special surface finishes specified on areas of drawing that are not controlled by the title block finish

### CLARITY

- *Overall views* -Do the views convey the design intent?
- *Isometric views* - One 3-D isometric view recommended.
- *Detail/Section views*
  - Include enough views to convey areas of importance.
  - Complicated port details.
  - Broken out sections.


### PROCESSING & HANDLING INFORMATION

- *Manufacturing instructions*
  - -Include special instructions, as required.
  - -Special tools, cutter callout w/location.
  - -Procedures defined (i.e. Nylon procedure).
- *Lifting instructions* –
  - Include notes specifying lifting locations, methodology (i.e. Spreader bars, thread size and depth).
  - Conforms with latest Revision of Design for Lift & Move W.I.
- *Weight* –
  - Include weight of part.
  - Recommended for all parts.
  - Required for all greater than 30 lbs.
- *Turning centers* - Permissible and/or size & location defined with appropriate tolerances, as required.
- *Symbolism* - Correct symbols are used according to Standard (i.e. GD&T, Welds, ISO, etc.).

### GENERAL

- Masking notes per Part Masking Process.
- Add job # to paint spec drawing/value-added tab (see painted part procedure), if required.
- Verify all Part Numbers on Drawings match all Part numbers on BOMs and vise versa.



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## 6.6 Mechanical Assembly Drawing & BOM Checklist (1 of 2)

### TITLE BLOCK

- “Title” - See QMS Work Instruction #0219.
- “Rev” - Latest revision.
- “Source/Ref Drawing” - List all reference P/N's.
- “Scale” - Include drawing scale Or “None”.
- “Material” - Fill in material or ref a flag note.
- “Material size” - Fill in size, “See drawing ”or “None”.
- “Finish” - Fill in the finish or reference a flag note.
- “General Tolerances” - Review default tolerances to ensure they meet the design requirements.

### CLARITY

- *Overall views* -Do the views convey the design intent?
- *Isometric views* - One 3-D isometric view required.
- *Detail/Section views*
  - Include enough views to convey areas of importance.
  - < 5 balloons pointing at a single component.
- *Mirror images*
  - Ensure proper views clearly specify assembly configuration.
  - Include views of multiple configurations (LH, RH, etc.).
- *Subassembly*
  - Break up assemblies, if possible.
  - Limit the number of items on BOM ( 50 max recommended).
  - If it can be assembled and put on a shelf, create a subassembly (i.e. Cylinder/LVDT assembly, etc.).


- *Hydraulic hardline & hoses*
  - On large assemblies show routing when interference is a concern. If not, supply fittings & Tubing on BOM. Have assembly route point A to B per instructions.
  - Picture drawings acceptable to depict routing.

### SPECIAL NOTES

- *Schematic*- Include ref doc # (700-xxx-xxx) on assembly drawing if schematic is depicted on a separate document (i.e. Hydraulic, electric, etc.).
- *Assembly instructions*
  - Include any special instructions. Reference doc # (700-xxx-xxx) on assembly drawing if special instructions are documented separate from assembly.
  - Drill & tap at assembly.
  - Alignment, pin and machine assembly.
  - Special lubricants, thread lock (Loc-Tite), etc.
  - Special tools w/ reference locations.
  - Part orientation (i.e. bearing location).
  - Shim specifications (include shim spacing and instructions, if required).
- *Reference dimensions*
  - Include overall dimensions, important features (i.e. hose connections).
  - Note: All dimensions are in inches [mm] and are reference unless otherwise specified.
- *Lifting Instructions*
  - Include notes specifying lifting locations, methodology (i.e. spreader bars, thread size and depth).
  - Conforms with latest revision of Design for Lift & Move W.I.
- *Weight*
  - Include weight of assy.
  - Recommended for all assemblies.
  - Required for all greater than 30 lbs.

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## 6.6 Mechanical Assembly Drawing & BOM Checklist (2 of 2)

- *Labeling (Brand, Safety, Technical Position, Cable, etc) -*
  - Label locations and designations are clearly defined on the drawing and included on the BOM.
  - Locations for Technical Position labels match schematic.

- *Loose parts* – Notes to bag and attach loose parts for later use (i.e. bolts to attach one sub-assembly to another).

- *Finish & masking* - Include appropriate notes.

### COMPONENTS

- *Hydraulics*
  - Verify that appropriate fittings and “As-required” tubing are called out on the BOM & Drawing.
  - Routings are shown on drawing, if necessary.
  - BOM contains approximate length of tubing.
  - Specify torque values on drawing (LB-FT [N-M] for valves, etc.)
  - Include spare/replacement parts, if required.
  - Verify that pressure rating of all tubing, fittings, and other components is appropriate.

- *Fittings*

- Ensure fitting sizes match ports on components.
- Verify fitting quantities on BOM and drawing.
- Torque values specified on drawing (LB-FT [N-M]).
- Routing & assembly of fittings allows for maintenance, ease of assembly/disassembly.
- Verify material choices are consistent (brass vs. stainless tubing, for compatibility reasons).

- *Fasteners*


- Verify quantities on BOM and drawing.
- Thread diameter/pitch/grade are appropriate.
- Fastener length is correct, threaded length is appropriate. Tolerance stack-up is accounted for.
- If non-standard torque values are required, specify on drawing (LB-FT [N-M]).
- Direction of fasteners (nut & bolt orientation).
- Include spare/replacement fasteners, if required.

- *Interference*

- Verify that mating-hole patterns match.
- Fasteners/fittings allow for tool and oversize weld clearance.
- Hard-line/hose & tooling clearances considered.
- Disassembly of fittings considered.

### GENERAL

- Watch for tolerance stack-ups
- Look for copy & paste mistakes or carry-over errors.
- Are all notes relevant?
- Verify all Part Numbers on Drawings match all Part numbers on BOMs and vice versa.

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## 6.7 3DVIA Assembly Drawing & BOM Checklist (1 of 2)

### TITLE BLOCK

- “Title” - See QMS Work Instruction #0219.
- “Rev” - Latest revision.
- “Source/Ref Drawing” - List all reference P/N’s.
- “Scale” - Include drawing scale Or “None”.
- “Material” - Fill in material or ref a flag note.
- “Material size” - Fill in size, “See drawing ”or “None”.
- “Finish” - Fill in the finish or reference a flag note.
- “General Tolerances” - Review default tolerances to ensure they meet the design requirements.


### CLARITY

- *Isometric views* - One 3-D isometric view required.
- *Detail/Section views*
  - Include enough views to convey areas of importance.
- *Subassembly*
  - Break up assemblies, if possible.
  - Limit the number of items on BOM ( 50 max recommended).
  - If it can be assembled and put on a shelf, create a subassembly (i.e. Cylinder/LVDT assembly, etc.).
- *Hydraulic hardline & hoses*
  - On large assemblies show routing when interference is a concern. If not, supply fittings & tubing on BOM. Have assembly route point A to B per instructions.
  - Picture drawings acceptable to depict routing.

### SPECIAL NOTES

- *Schematic*- Include ref doc # (700-xxx-xxx) on assembly drawing if schematic is depicted on a separate document (i.e. Hydraulic, electric, etc.).
- *Assembly instructions*
  - Include any special instructions. Reference doc # (700-xxx-xxx) on assembly drawing if special instructions are documented separate from assembly.
  - Drill & tap at assembly.
  - Alignment, pin and machine assembly.
  - Special lubricants, thread lock (Loc-Tite), etc.
  - Special tools w/ reference locations.
  - Part orientation (i.e. bearing location).
  - Shim specifications (include shim spacing and instructions, if required).
- *Reference dimensions*
  - Include overall dimensions.
  - Note: All dimensions are in inches [mm] and are reference unless otherwise specified.
- *Lifting Instructions*
  - Include notes specifying lifting locations, methodology (i.e. spreader bars, thread size and depth).
  - Conforms with latest revision of Design for Lift & Move W.I.
- *Weight*
  - Include weight of assy.
  - Recommended for all assemblies.
  - Required for all greater than 30 lbs.

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## 6.7 3DVIA Assembly Drawing & BOM Checklist (2 of 2)

- *Labeling (Brand, Safety, Technical Position, etc.)* -
  - Label locations are clearly shown in the model and included on the BOM.
  - Locations for Technical Position labels match schematic.
- *Loose parts* – Notes to bag and attach loose parts for later use (i.e. bolts to attach one sub-assembly to another).
- *Finish & masking* - Include appropriate notes.


### COMPONENTS

- *Hydraulics*
  - Verify that appropriate fittings and “As-required” tubing are called out on the BOM & Model.
  - Routings are shown on the model, if necessary.
  - BOM contains approximate length of tubing.
  - Specify torque values on drawing (LB-FT [N-M] for valves, etc.)
  - Include spare/replacement parts, if required.
  - Verify that pressure rating of all tubing, fittings, and other components is appropriate.
- *Fittings*
  - Ensure fitting sizes match ports on components.
  - Verify fitting quantities on BOM and drawing.
  - Torque values specified on drawing (LB-FT [N-M]).
  - Routing & assembly of fittings allows for maintenance, ease of assembly/disassembly.
  - Verify material choices are consistent (brass vs. stainless tubing, for compatibility reasons).

- 
- *Fasteners*
  - Verify quantities on BOM and drawing.
  - Thread diameter/pitch/grade are appropriate.
  - Fastener length is correct, threaded length is appropriate. Tolerance stack-up is accounted for.
  - If non-standard torque values are required, specify on drawing (LB-FT [N-M]).
  - Direction of fasteners (nut & bolt orientation).
  - Include spare/replacement fasteners, if required.
- *Interference*
  - Verify that mating-hole patterns match.
  - Fasteners/fittings allow for tool and oversize weld clearance.
  - Hard-line/hose & tooling clearances considered.
  - Disassembly of fittings considered.

### GENERAL

- Watch for tolerance stack-ups.
- Are all notes relevant?
- Must have note indicating there is an attached 3DVIA file.
- The simplified assembly drawing will not include balloons for components.
- Verify all Part Numbers on Drawings match all Part numbers on BOMs and vice versa.

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<p>Work Instruction Owner(s) – list Functions: <b>Engineering</b></p>		<p>Revision's Training Requirements – select one or both (per section #9): <b>Awareness _ Formal X</b></p>	

## 6.8 Electrical Assembly Drawing & BOM Checklist (1 of 2)

### TITLE BLOCK

- “Title” - See QMS Work Instruction #0219.
- “Rev” - Latest revision.
- “Source/Ref Drawing” - List all reference P/N's.
- “Scale” - Include drawing scale Or “None”.
- “Material” - Fill in material or ref a flag note.
- “Material size” - Fill in size, “See drawing ”or “None”.
- “Finish” - Fill in the finish or reference a flag note.
- “General Tolerances” - Review default tolerances to ensure they meet the design requirements.


### CLARITY

- *Overall views* -Do the views convey the design intent?
- *Isometric views* - One 3-D isometric view required.
- *Detail/Section views*
  - Include enough views to convey areas of importance.
  - < 5 balloons pointing at a single component.
- *Mirror images*
  - Ensure proper views clearly specify assembly configuration.
  - Include views of multiple configurations, LH, RH, etc.
- *Subassembly*
  - Break up assemblies, if possible. Limit the number of items on BOM. 50 max recommended.
  - If it can be assembled and put on a shelf, create a subassembly. i.e. PLC assembly, etc.

### SPECIAL NOTES

- *Schematic*- Include ref doc # (700-xxx-xxx) on assembly drawing if schematic is depicted on a separate document. i.e. Hydraulic, electric, etc. *Assembly instructions*
  - Include any special instructions. Reference doc # (700-xxx-xxx) on assembly drawing if special instructions are documented separate from assembly.
  - Wiring diagrams/schematics.
  - Mod logs
- *Reference dimensions*
  - Include overall dimensions, important features, i.e. junction box specifications.
  - Note: All dimensions are in inches [mm] and are reference unless otherwise specified.
- *Labeling (Brand, Safety, Cable, etc)* -
  - Label locations and designations are clearly defined on the drawing and included on the BOM.
  - Designation labels match schematic.
- *Loose parts* – Notes to bag and attach loose parts for later use, i.e. in-line connector mate, labels for field-cut cables.
- *Finish & masking* - Include appropriate notes.

**Continued on next page**


	<p align="center"><b>QMS Work Instruction</b> <b>MTS Systems Corporation – MTS Test</b></p>	<p>Document Number: <b>N/A</b></p>	<p>Rev.: <b>G</b></p>
<p>Title: <b>Drawing and Bill of Materials Checking</b></p>		<p>Page #: <b>13 of 15</b></p>	
<p>Work Instruction Owner(s) – list Functions: <b>Engineering</b></p>		<p>Revision's Training Requirements – select one or both (per section #9): <b>Awareness _      Formal X</b></p>	

### 6.8 Electrical Assembly Drawing & BOM Checklist (2 of 2)

- *Connectors*
  - Ensure connector sizes match cut-outs on components
- *Fasteners*
  - Verify quantities on BOM and drawing.
  - Thread diameter/pitch/grade are appropriate.
  - Fastener length is correct, threaded length is appropriate. Tolerance stack-up is accounted for.
  - Include spare/replacement fasteners, if required.
- *Interference*
  - Verify that mating hole patterns match.
  - Fasteners allow for build access and tool clearance.

**GENERAL**

- Watch for tolerance stack-ups
- Look for copy & paste mistakes or carry-over errors.
- Are all notes relevant?
- Verify all Part Numbers on Drawings match all Part numbers on BOMs and vice versa.

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Work Instruction Owner(s) – list Functions: <b>Engineering</b>		Revision's Training Requirements – select one or both (per section #9): <b>Awareness _ Formal X</b>	

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

Required Record
BOM

## 8 REFERENCE FORMS / TEMPLATES / DOCUMENTS (IF NEEDED)


Form / Template / Document Title	Location
BOM	DOD/SAP
DOD	<a href="http://msp-dod-s1.go.mts.com/dod/">http://msp-dod-s1.go.mts.com/dod/</a>
Submitting As-Built Engineering Changes from MTS Manufacturing (W.I.).	<a href="#">Link</a>
Engineering Change Management System Procedure	<a href="#">Link</a>
Remainder of the documents found on the QMS page; Engineering and Project Quality (System) General Engineering (Phase) Engineering Records Control (Process)	<a href="#">Link</a>

## 9 CURRENT REVISION'S TRAINING REQUIREMENTS

Select (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.

### Functions/Groups that require training to this work instruction:

- Formal training to all Mechanical & Electrical Engineers, Designers, Drafters, Manufacturing Engineers and Quality Engineers.

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Work Instruction Owner(s) – list Functions: <b>Engineering</b>		Revision's Training Requirements – select one or both (per section #9): <b>Awareness _ Formal X</b>	

## 10 REVISION HISTORY & APPROVAL

Revision History			
Rev	Description of Change	Author	Effective Date
A	Create work instruction	Bob Haapala	07/16/2009
B	Updated to reflect new processes LDD's and 3DVIA	Dennis Jacobson	06/08/2012
C	Updated General Requirements regarding controlled documents	Dennis Jacobson	01/18/2013
D	Grammatical changes	Dennis Jacobson	04/24/2013
E	Added rules for checking. Defined roles of document creator, engineer, and checker. Updated flowchart.	Jesse Gunderson	01/14/2015
F	Add electrical engineering checklist, added graphic flow chart, added 6.1.5 & 6.1.6 and clarified 6.2.2, items included in print package.	Michele Fritze	04/15/2015
G	Updated the Check Print stamp to include checklist example	Marv Westermann	6/1/2016

Approval of Current Revision		
Name / Function	Signature	Date
Marv Westermann Director of Solutions Engineering		
Scott Firman Director of Solutions Engineering		