

## **Required Documentation and Timing Protocol for New Can, End, & Closure Production Equipment**

Note: Documentation required for final payment

### **Engineering Documentation:**

CAD Drawings, Schematics and Diagrams:

#### 1) Mechanical:

- a) Assembly drawings with Bills of Material for the following:
  - i) Main Machine or Press Assembly (with color contrasted colorized hatch between mating parts)
  - ii) Sub-assemblies (tooling, feed and discharge assemblies, etc.) (with color contrasted colorized hatch between mating parts)
  - iii) All Accessory devices (operator pedestals, panels, and cabinets...etc.)
- b) Detail drawings for the following:
  - i) All tooling & die sets related to the end product or operation being performed
  - ii) All wear parts (stock, cover, stripper plates, air cushion pistons, pins, shafts, transfer mechanisms...etc.)
  - iii) All power transmission or mechanized movement-related parts (gears, belts, motors, shafts, actuators...etc.)
  - iv) Any spacers or shims necessary to setup tooling, transfer mechanisms, guides, etc.
  - v) If details are dimensioned primarily in millimeters (mm), include English dimensions & equivalent tolerances as secondary
- c) 3D Models of any part or assembly drawing included in requirements "A" or "B" above. Top-Level assembly models should be externally accurate, internal components not required unless included by section "B" above. Acceptable formats listed below in order of preference:
  - i) Step (.STP) files
    - AP 242
    - AP 214
    - AP 203
  - ii) Native Autodesk Inventor (.IPT and/or .IAM)
    - If providing Native Inventor files, please provide "Pack n Go" zipped packages so all required references are included
  - iii) Native Solidworks (.SLDPRT and/or .SLDASM)
    - If providing Native Solidworks files, please provide "Pack and Go" zipped packages so all required references are included

#### 2) Electrical:

- a) PLC and display programs files with comments in English
- b) Electrical schematics of Power and Control Circuits
  - i) Full size or legible reduced size hard copies to be shipped with new equipment
  - ii) For electronic form see section 4a
- c) Assembly drawings and Bill of Materials for all electrical control panels, junction boxes and pushbutton or touch screen stations
- d) Layout of device locations with Bill of Materials
- e) Conduit routing with wire pull information

3) Other:

- a) Pneumatic and hydraulic schematics, lubrication diagrams
  - i) Full size or legible reduced size hard copies to be shipped with new equipment
  - ii) For electronic form see section 4a

4) Document Medium\*:

- a) All mechanical and electrical drawings furnished to the Equipment Engineering Department are to be provided in electronic form in Autodesk AutoCAD .dwg format; or Inventor .IDW format. DXF file format if necessary, as a last resort
- b) Legible reduced size printed copies on 11 x 17 or 8-1/2 x 11 are required
- c) If the BOM is not on the assembly, it needs to be provided in Microsoft Excel format, when practical
- d) PLC and display programs must be provided in electronic form
- e) Electronic files can be submitted to the Equipment Engineering Department on CD, flash drive, or via E-mail, when combined files are less than 20Mb in size, to the Manager of the Equipment Engineering Department

\*Note: Electronic documentation need only be sent to Equipment Engineering

**Equipment Manuals:**

Manuals must include:

1) General:

- a) Vendor information and contacts
- b) Basic safety instructions
- c) Technical specifications
- d) Transport and storage information
- e) Installation information
- f) Operating elements, modes and functions
- g) Application and set-up information
- h) Maintenance and lubrication information
- i) Spare parts list with pricing
- j) Purchased components literature

2) Mechanical:

- a) Assembly drawings with Bills of Material and an indented BOM from top through lowest assemblies
- b) Stack up dimensions of critical components for auditing correct assembly, if applicable
- c) Mounting dimensions for die sets and other components to main press or machine, if applicable
- d) In the case of proprietary drawings provide an illustration for maintenance purposes to include finishes, thickness, tolerances and form control, if applicable

3) Manual Quantity Requirements\*\*:

- a) Four complete sets of manuals will be supplied to the following:
  - i) 2 Copies will be shipped to the plant with the new equipment (1 Copy, if manual is provided in electronic, .PDF, format)
  - ii) 1 Copy will be sent to the Manufacturing/Project Engineer responsible for the installation
  - iii) 1 Copy will be sent to: Equipment Engineering Department  
5701 Frontier Road  
Oconomowoc, WI 53066

\*\*Note: Manuals provided in electronic form, .PDF format, are permissible

### **Timing Protocol\*\*\***

- 1) All Engineering Documentation and Equipment Manuals outlined in sections 1 through 7 must be provided after buyoff completion and prior to equipment installation
- 2) A project review meeting will be held 90 days after buyoff completion to discuss and update all documentation, (i.e. Drawings, Bills of Material, EN's and Equipment Manuals). Attendees shall include Silgan plant representative, Manufacturing/Project Engineering personnel and Equipment Engineering personnel
- 3) All updated documentation will be provided to the Equipment Engineering Department 30 days after the project review meeting
- 4) A second project review meeting will be held 9 months after buyoff completion. This meeting is to verify that all documentation in Silgan Containers Manufacturing Corporation's possession is up to date, and that the entire documentation package is complete

\*\*\*Unless otherwise specified and agreed upon by Equipment Engineering Manager