Control Dim Spec

DS1005

Revision History:

Revision	Date	Person Responsible	Description of Change
J	03/18/2026	Pat Gaukel	Recreated in IATF Format;

1. **PURPOSE AND SCOPE:**
   - 1.1. **This specification covers the JTEKT requirements of special characteristics as specified on JTEKT prints. The following specification defines the requirements for special characteristics (critical, significant and pass through) for JTEKT Column Systems North America (JCSNA).**
2. **OWNERSHIP:**
   - 2.1. **JTEKT Column Systems North America – Bronson Product Engineering Department, controls this document.**
3. **DEFINITIONS:**
   - 3.1. **∇ – CC – Critical Characteristic**
   - 3.2. **♦ - SC – Significant Characteristic (△ was used on older designs with the same meaning)**
   - 3.3. **[P/C] - PTC – Pass Through Characteristic**
   - 3.4. **DFMEA – Design Failure Modes & Effects Analysis**
   - 3.5. **PFMEA – Process Failure Modes & Effects Analysis**
   - 3.6. **FMVSS – Federal Motor Vehicle Safety Standards**
   - 3.7. **FMCSA – Federal Motor Carrier Safety Administration**
   - 3.8. **Out Of Control – Any process NOT exhibiting a normal distribution, such as bi-modal, skewed distribution (unless the tolerance is unilateral and the skew direction aligns with the tolerance anticipation i.e. GD&T feature where 0 would be the ideal condition).**
   - 3.9. **In Control – A process that when plotted on a histogram shows normal distribution.**
   - 3.10. **All critical and control characteristics will allow control at the subassembly or component level.**
   - 3.11. **NO critical or control characteristic will be identified as reference on the drawing.**
   - 3.12. **Supplier – The term supplier is to mean whoever is producing the part, whether it be in-house or at an outside source, the expectation is the same.**
4. **Critical Characteristic (∇):**
   - 4.1. **A critical characteristic is a feature that is directly related to a safety condition or a regulatory requirement. Non-compliance with the spec may lead to things such as loss of steering, uncontrolled movement of the column which could affect control of the vehicle, or failure of a vehicle safety system such as turn signal, horn, steering angle sensor, clock spring, etc. These failures may be with or without warning.**
   - 4.2. **Critical characteristics are created and applied to JCSNA drawings as a result of reviewing the DFMEA and reviewing the output against the definitions identified**

in SC/CC/PTC Assignment procedure. Critical characteristics may also be customer dictated and flowed down through the drawings as appropriate.

4.3. Control of characteristics identified as critical must adhere to the requirements of the customer or JCSNA, where customer requirements are not specified. Lot control and long-term record retention must be maintained (see section 7 of this document). Classification of the items as critical characteristics will be required when the following conditions exist on the PFMEA.

4.3.1. Failure Mode/Cause combinations having a severity rating of 9 or 10, unless there are special controls to reduce the detection rating to 1.

4.3.2. If the supplier cannot reduce the detection rating to 1, the supplier of the part is to direct JCSNA Product Engineering to add critical characteristics to the drawing.

4.3.3. Critical characteristics on JCS drawings will be identified by the use of DARK LINED BOXES AROUND CHARACTERISTICS **or (A) beside characteristics on drawings marked** VITAL PART

4.3.4. Customer designated critical characteristics are included in this category.

4.3.5. Government or outside regulatory control (i.e. FMVSS & FMCSA) are included in this category.

4.4. Critical characteristics are subject to Capability Requirements defined in section 7 of this document.

5. Significant Characteristic (♦):

5.1. A significant characteristic is a feature that is directly related to a degraded condition or loss of either a primary or secondary function of the steering component. Non-compliance with the spec may lead to things such as loss of tilt or telescope function within the steering column, excessive movement of the column (lash) which could affect how the operator feels the column moves, higher than normal operational efforts (stiff rotation, high tilt or telescope efforts) or loose/flexible parts that should be fixed or rigid within the system.

5.2. Control of characteristics identified as significant must adhere to the requirements of the customer or JCSNA, where customer requirements are not specified. Classification of the items as significant characteristics will be required when the following conditions exist on the PFMEA:

5.2.1. Failure mode/cause combinations having a severity rating between 5 and 8 (inclusive), and an occurrence rating greater than or equal to 4.

5.2.2. Special controls should be stated on the PFMEA/Control Plan with the intent to reduce the occurrence rating to less than 4.

5.2.3. Special controls should be established on the PFMEA (Controls-Detection)/Control Plan to reduce the detection rating to 1 or 2. If the occurrence rating cannot be reduced to less than 4, the supplier is to direct JCSNA PE to add the significant characteristic to the drawing.

5.2.4. If the appropriate PFMEA reductions are obtained, then the requirement for special controls and documentation is eliminated.

5.2.5. Corrective actions are required for any characteristic with an RPN value equal to or greater than 120 on the PFMEA.

5.2.6. Note: Customer designated significant characteristics are included in this category

5.3. Significant characteristics are subject to Capability Requirements defined in section 7 of this document.

6. Pass Through Characteristics [P/C]:

6.1. Customer pass through characteristics are features that are created by a sub-supplier(s) and not used by JCSNA in our manufacturing process (i.e. accessory attachment features that are cast into a housing but not used or directly verified via process interface at JCSNA). These features are normally customer interface features and non-conformity can result in customer assembly issues.

6.2. Pass through characteristics are typically identified during the design review process. During this process customer interface features are identified as not being utilized in one of our processes to validate presence and compliance. The result of this design review will be the addition of [P/C] to the feature needing to be validated.

6.3. It is the responsibility of the supplier to ensure that appropriate controls and inspections of these features are present and correctly processed. Control methods and frequency of these inspections are to be agreed upon between the supplier and JCSNA Quality team.

7. Capability Requirements:

7.1. Parts that are subject to capability requirements shall have each feature individually evaluated for both short term and long-term capability. Records of these studies shall be completed and submitted with initial PPAP and maintained for the life of the program. Such records shall be made available to JCSNA upon request.

7.1.1. Short-term studies:

- **Short term studies are defined as a machine capability study that normally requires a minimum of 30 consecutive parts that are run after machine setup, warm up and adjustments are complete. Production methods, materials and possible processes are to be utilized.**
- **Process potential study normally requires a run of 300 or more pieces with 25 subgroups totaling a minimum of 100 pieces used for analysis. Production materials, methods and processes must be utilized. Samples do not have to be consecutive but should be recorded in the sequential order that they are run.**

SHORT TERM REQUIREMENTS		
	Cpk < 1.67	Cpk > 1.67
OUT OF CONTROL	100% SORT	100% SORT
IN CONTROL	100% SORT	PER CONTROL PLAN

-

7.1.2. Long Term Studies:

- **Initial long-term studies will use control limits and other values from the preliminary process study. Once a minimum of 20 days production with continuous charting (25 subgroups minimum) is completed, control limits can be recalculated.**

LONG TERM REQUIREMENTS		
	Cpk < 1.33	Cpk > 1.33
OUT OF CONTROL	100% SORT	100% SORT
IN CONTROL	100% SORT	PER CONTROL PLAN

-

7.1.3. Pre-Control Charting:

- **With the agreement of JCSNA Quality team, continuous Pre-Control charting can be used in lieu of calculated Cpk reporting. Control limits shall be agreed upon between JCSNA Quality and the supplier of the part. The Pre-Control limit shall not exceed 60% of the drawing tolerance, with 50% being the recommended value. Evidence of completed continuous charting to be made available JCSNA Quality upon request.**

7.1.4. 100% Inspection:

- **With agreement of JCSNA Quality team, parts may be 100% inspected with an approved attribute gage. All attribute gages used shall be subject to calibration, with recalibration frequency appropriate to the number of parts inspected and potential for wear on the gage. The gage design and calibration frequency shall be agreed upon between JCSNA Quality and the supplier of the part.**

8. ASSOCIATED DOCUMENTS:

8.1. I-8-C-PE-P-004 Design FMEA

8.2. I-8-C-PE-P-001 SC CC PTC Assignment

8.3. I-8-C-QA-P-004 Process Change Request

8.4. I-8-C-PE-P-006 ECR/ECO Procedure

8.5. I-8-C-QA-F-002 Supplier Special Characteristics Agreement

8.6. I-8-C-PU-F-010 Supplier Change Request

8.7. I-8-C-PU-WI-001 JTEKT Supplier Manual