JATCO Confidential C

Supplier Quality Assurance Manual

(SQAM)

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JATCO Ltd.

Quality Assurance Department, Production Division

Purchasing Administration Department, Purchasing Division

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1. General Rules

1.1 Basic Policy of Quality Assurance

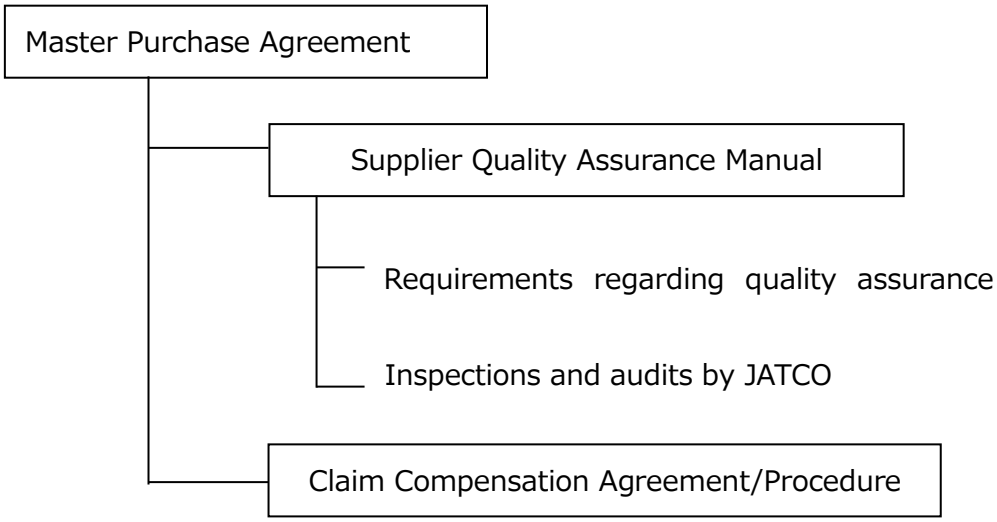
The environment surrounding the automotive field and parts industry has grown much more severe and competition between companies has reached a new level of intensity. This is due to, among other things, the diversification of customer values, and their increasingly high demands toward products, as well as various restrictions concerning safety, environment and energy.

These days, providing the customer and the market with a product that captures “the customer’s true desire” is the most fundamental business practice. At JATCO, we follow our basic quality policy of “Actualization of a higher quality level that continues to be in reliable to our customer”.

1.2 Quality Assurance of Products Purchased by JATCO (*1)

*1: ‘JATCO’ includes JMEX/JGZ/JTL/JSZ

When purchasing parts from our suppliers, it is presupposed that we will buy from suppliers who can guarantee 100% of the products. From our basic philosophy of mutual trust and respect of one-another’s independence, the arrangement regarding quality assurance is shown as below:



1) JATCO’s requirements for quality assurance is specified in the Supplier Quality Assurance Manual explains.
2) JATCO will implement inspections and audits to verify the suppliers’ quality assurance level, and propose requirements / actions for improvement as deemed necessary.

1.3 Quality Assurance for Delivered Parts by Suppliers

We will receive delivered parts that are 100% conforming, that is all parts fulfil the all specifications requested by JATCO. (Assurance-Delivery-System)

For this purpose, JATCO requires suppliers to establish and maintain a self-quality assurance system that meets the following requirements:

1) Make clear the company policy regarding quality assurance, and the organization for self-quality assurance which takes the following into account. It shall make full improvements in order to ensure that all of JATCO's required specifications are achieved throughout all stages of design development, prototypes, and production preparation (quality assurance for new products). It shall be a system which can at all times maintain stable production and provide a delivery production through all stages of volume production (quality assurance for volume production).
2) Develop and manage the organization that will allow the complete implementation of the various activities which are based on the quality assurance system.
3) Provide full and timely product-quality information when requested by JATCO.
4) Develop procedures for handling and resolving troubles that occur after delivery, and take corrective actions for recurrence-prevention.
5) The quality responsible person shall always monitor the company's state of compliance with 1) - 4) above, and shall take the necessary actions if a problem is found.
6) JATCO official language is English, JATCO Japan will specify language (English or Japanese) used at document submission. The supplier shall make the document in the specified language. For suppliers shipping parts to JATCO's facility outside of Japan, English language shall be used for all communications and documents.

2. Relationship to IATF 16949

JATCO quality assurance system is based on IATF 16949:2016 or latest version. Under this text "Supplier Quality Assurance Manual" we clarify the basic quality system prescribed by IATF 16949.Suppliers shall develop and work with a system which complies with IATF 16949 as we based this procedure.

3. Definition of Terminology

JATCO's Required Specifications	1) Drawings, specifications, QA Table (Quality design sheet), inspection standards, various standards, and other similar documentation provided by JATCO and submit to the supplier. 2) Drawings prepared by the supplier and accepted by JATCO. 3) Other items, discussed and agreed-upon by both parties.
Priority parts	Parts including-important characteristics. The parts specified by JATCO as "Priority Parts" on the required specifications (design drawings).
Critical safety parts	Parts including Critical safety characteristics s. The parts specified by JATCO as "Critical safety parts" on the required specifications (design drawings).
General Parts	Parts other than parts which has QA characteristics and/or Priority characteristics.
Priority characteristics	Quality characteristics of Priority Parts and region specified by drawing.
QA table(Quality design sheet) characteristics	Quality characteristics listed on the QA Table (Quality design sheet) issued by JATCO. QA Table(Quality design sheet) include QA Characteristic and Semi-QA characteristic.
S-Characteristic	Special characteristics and characteristics specified by the customer.
Critical safety characteristics	This characteristic especially becomes the factor of failure in the parts with important function. That function has possibility of critical failure. This characteristic enclosed with wavy line in drawing.
Initial-sample	Parts produced using volume production condition denominated off tools and off process. Those parts precede mass-production delivery.
Initial Production "Hatsumono"	First delivered lot of VC-lot;one of Design prototype, or PT1 and PT2 and mass-production parts. Including production after any change of design and/or production process.
Customers	Automobile manufacturers, which purchase products from JATCO and customers who purchase those vehicles.
Suppliers	Companies which supply parts and materials and/or service.
Layout Inspection	Full inspection of dimensions indicated on the drawing. (Including the quality of heat treatment (hardness) and draft angle of pressing stamping parts, etc.)
Inspection of All Characteristics in the Drawing	Full inspection of dimensions, characteristics, performance, materials, etc. indicated on the drawing. (Material constituent, dynamic test, performance test, durability test, etc.)
Purchased Parts DR	Joint implementation of Confirmation Meeting with JATCO on production preparation and process design
Approval	Procedure for acceptance of submitted documents to JATCO.

4. Basic Requirements Related to Quality Assurance

This section describes the basic requirements requested by JATCO in order to assure a stable product quality by the suppliers.
JATCO requirements are based on IATF 16949: latest version for further information, refer to IATF 16949: latest version. Hereafter, IATF 16949:2016 will be shown IATF 16949.

4.1 Management Responsibility

1) The management shall work to establish and document the company's quality policy, including objectives and evaluation standard for product quality and the management's accountability regarding quality.
2) After its responsibilities and authority of management towards quality assurance and their mutual relationship have been clarified and documented, responsible person shall be selected. This person shall work to establish, maintain, and improve the quality assurance system. Quality assurance shall include, selecting special characteristics, establishing quality objectives and related education and training, correction and preventative action, and design and development of product.
3) Inform JATCO who is the responsible person for quality assurance. By following the procedure "Guide for Assignment and Notification of Responsible person for Quality Assurance."
4) The management shall regularly evaluate the Quality assurance system to determine its properly and effectively function.
5) The management shall review JATCO's satisfaction indices and make continual improvements as needed.
6) Management shall establish a system that provides information on nonconforming product or process to the managers who have responsibility and authorization to the corrective action. Additionally, management shall empower the employees who have responsibility for conforming to the specific product requirements, to suspend production in an effort to correct quality issues. For production activity that applies entirely shift-work system, management shall allocate employees, who are responsible of conforming to the specific product requirement, or who have been delegated such responsibility.

7) Quality Management System Review shall cover all matters and that performance trends required by Quality Management System as an essential part of continuous improvement.
To make evidence that there is a minimum achievement made in “Stated Quality Objectives” and “Customer Satisfaction with delivered product”, the following items shall be included and recorded for inputting to management review.
To input Management review, the following items shall be included and recorded.
・Failures that actually being occurred, failures on a potential filed and also analysis of those defects having impact on quality, safety or environment
・Achievement ratio of Quality Objectives
・Cost relevant to nonconforming product

Related Guide/Form

Guide for Assignment and Notification of Responsible person for Quality Assurance（S.R-1）
Report on Assignment/Change of Responsible Person for Quality Assurance（Form 1）

4.2 Quality System

1) The supplier shall obtain certification of ISO9001: 2015 or latest version or IATF 16949; 2016 or latest version, to assure conformity for products requirement.
2) Maintain the necessary standards and procedures for quality assurance.
3) Clarify the responsibility and develop the procedure for establishing, changing, or abolishing standards and procedures. Maintain a latest version of them.
4) Monitor manufacturing process defect rate, productivity, rate of compliance with promised delivery date, etc. and implement continual improvement activities.
5) For document submission requested from JATCO, shall follow this SQAM.

4.3 Contract Review

The supplier shall establish in a documented form procedures for contracts review with JATCO, as well as for changing contract content, and for coordinating such activities, the supplier shall be able to deliver products that fully conform to JATCO’s requirement.

4.4 Design Control

1) Suppliers intending to design parts based on JATCO’s required specifications, shall develop an IATF 16949-conforming system to control design process and verify design output. Follow the procedure in the “New product quality procedure for development stage”.
2) During development stage, suppliers shall build a project team if requested by JATCO.
3) When completing design of the part based on the specifications provided by JATCO, suppliers shall submit drawing to the responsible design department of JATCO for approval. This approval shall be completed before tooling release.

4) All design changes shall be clear documented, and their content shall be verified. Before release of design note, suppliers shall submit the “Design and Engineering Report” to the appropriate design department of JATCO and also submit the “Notification of Design & Process change” to the responsible supplier quality assurance department of JATCO for approval,
5) For approval procedures relating to design changes, refer for details on S.R.-2 Guide for Production Part Approval.
6) Suppliers by any reason shall not disclose, publish or release any confidential information regarding parts being developed under contract with JATCO.

Related Guide/Form

Guide for Change Control (S.R-4)

Guide for Production Part Approval (S.R-5)

- ・Guide for New Product Quality Procedure for Development Stage (S.R-12)
- ・Part Submission Warrant(PSW) (Form 2)
- ・Notification of Design/Process change (Form 21)
- ・Design and Engineering Report (Form 42)

4.5 Document and Data Control

1) The supplier shall document and maintain procedures (approval, issuing, changes and abolition, retention period, etc.) for control of documents and data related to quality assurance. The document retention period shall not be less than the period prescribed by JATCO. When implementing, must follow the “Guide for Control of Documents, Data, and Quality Records.”
2) The above shall include external documents such as standards, and the drawings, technical standards, and specifications from JATCO.
3) Verify that each department in your organization is using latest version of the document the most recent documents and data at all times. Documents which are invalid or which have been abolished shall be promptly disposed or correct obsolete handling preventing their further use.

Related Guide/Form

Guide for Control of Documents, Data, and Quality Records (S.R-2)

4.6 Purchasing

1) If the supplier purchases parts or materials from a sub tier supplier, related procedures shall be documented and maintained.
2) If the supplier purchases parts or materials, the “Guide for Management of the Suppliers” shall be followed. In the event that JATCO direct a supplier, the materials shall be purchased from the specified suppliers. However, even if the materials are purchased from the specified suppliers, this does not absolve the supplier from the responsibilities of quality assurance.
3) Materials used in manufacturing of parts shall be verified as conforming to the government regulations concerning specific toxic and dangerous materials, safety regulations, and regulations concerning the environment, electricity/magnetism. This verification shall be done following JES M9001 (Restrictions against using particular materials). If requested, the results of conformity confirmation shall be submitted to JATCO. In addition, for the identification and display method for parts using high Polymer materials (thermoplastics, thermosetting plastics, thermoplastic elastomers, rubber, Synthetic fiber), follow "JES M9003 (Method of identifying and displaying materials used for polymer parts)".
   For a copy of JES M9001 and JES M9003, contact the appropriate purchasing department of JATCO.

4) Consider the following when purchasing from a sub-tier suppliers:
   (ア) Conduct an ~~annually~~ audit to evaluate the quality assurance system of the production process, inspection system, etc. of the sub tier suppliers. In case unsatisfactory item is found in the quality assurance system, the supplier shall give guidance as necessary and request correction.
   (イ) When selecting sub tier suppliers, the supplier shall evaluate their engineering level, quality assurance level and production capacity and after this, select the respective sub tier suppliers.
   (ウ) The supplier shall assure the part quality by performing inspection and inspection record shall be retained.
   (エ) The supplier shall inform necessary requirements from JATCO to the sub tier suppliers and confirm their correct understanding and implementation. Training shall be conducted as necessary.
5) Process changes shall be implemented only after submission of “Process change request” beforehand to the responsible supplier quality assurance department of JATCO and obtaining approval. Follow the procedures in the “Guide for Change Control”.
6) JATCO or JATCO’s customers may conduct audits in order to verify supplier’s quality system status. However, audit’s results by JATCO or JATCO’s customers cannot be used as evidence of being an effective quality system of the supplier.
7) JATCO may evaluate periodically supplier’s quality system and enforcement situation JATCO may request the supplier to implement quality improvement activities. JATCO will periodically confirm the progress of the activities.

8) JATCO may evaluate periodically sub tier supplier's quality system and enforcement situation JATCO involvement does not absolve the supplier's responsibility of their own sub tier suppliers and sub-contractors quality performance evaluation.

9) Supplier should monitor the performance of your Tier 2 suppliers and under. The following items need to be included.

・Complaints including returned market defected parts from customers and JATCO

・Delivery schedule (including cost incurred for special conveyance)

・conformity with requirement of delivered product

We suggest that suppliers themselves should monitor or carry out Self-evaluation of performance.

Related Guide/Form

Guide for Use of Suppliers (S.R-3

Guide for Change Control (S.R-4)

Supply Chain Registration Control Sheet (Form 47)

4.7 Control of Customer-Supplied Part

1) The Supplier shall develop and maintain the procedures for receiving, receiving inspection, storage and handling of customer-supplied part received from JATCO. Those records regarding customer-supplied part shall be retained.
2) Customer-supplied parts received with damaged or not adequate to use shall be reported to JATCO.
3) Tools and equipment with JATCO property shall be graved with a clearly identifiable sight.

4.8 Part Identification and Traceability

1) All parts shall be identified by a unique number or by other means（Traceability control）, during all processes from receipt of materials, to manufacturing and delivery. The procedures for such operation shall be documented and maintained.
2) Traceability control shall be implemented to ensure part traceability back to raw materials, manufacturing process, inspection, etc.
3) Traceability control records shall be accessible during retention period prescribed for JATCO.
4) Traceability control shall be done following the "Guide for Traceability Control."

Related Guide/Form

Guide for Traceability Control (S.R-6)

4.9 Process Control

1) In order to obtain high quality during volume production, control plan, process/work instruction, inspection standards, equipment-maintenance confirmation procedure, control chart, check sheet, etc., shall be prepared before launch of production. Training and work observation shall be conducted.
2) In order to prevent trouble during volume production, production preparation activities shall be done according to the plan. Confirmation activity of production quality shall be done in preparation period.
3) For Priority Parts and QA characteristics, and Semi-QA characteristics control shall be done based in following the "Guide for Control of Priority Parts and QA table(Quality design sheet) characteristics".
4) The quality responsible person shall perform particular activities during launch period, following the "Guide for Particular Activities during Launch Period" to stabilize quality of volume production promptly.
5) In order to permanently maintain stable product quality, process control shall be done following the "Supplier Quality Assurance Manual"
6) Facilities shall be organized, arranged, cleaned, etc. as appropriate for production. In order to assure product quality, procedures of daily check and periodically checks of equipment, tools, measuring equipment, etc. shall be established and controlled.
7) Processes shall be controlled and managed according to control plan, standard operation manual, inspection standards, equipment-maintenance standards, etc. Processes shall be well observed and the result shall be recorded to ensure stable production quality. Especially for processes that interfere with QA table(Quality design sheet) characteristics control shall be using control charts etc.
8) In the case where there is any set-up changes at production process, assign a person who has responsibility and authorization to validate set-up change in each case.
Additionally, standard operation manual should be available for use of set-up change operator.
9) Process capability shall be monitored and corrective actions and improvements (i.e.: adding inspection process, etc.) shall be taken if capability does not achieve the objectives described in this SQAM, following the "Guide for New Product Quality Procedure for Production Preparations Stage."
10) Special processes which are difficult to verify by ordinary inspection and testing shall be controlled and audited following the "Guide for Special Process Control" to assure stable quality.
11) The supplier shall prepare a plan for assuring supply to JATCO in the event of any emergencies (i.e.: interruption of transportation, shortage of manpower, failure on equipment or facility, catastrophic or natural disaster and large amount of returned defects from market, etc.)

12) In case of design or process change, the “Notification of Process/ Design Change” shall be submitted to the responsible supplier quality assurance department of JATCO. Quality assurance activity including JATCO’s requirements and Production parts approval shall be done to obtain approval before implementing the change. Changing parts shall be delivered following the “Guide for Change Control”.
If specifically directed by JATCO, report to Supplier Quality Assurance Dept. that there is no changes even if no process change and design change.

13) In order to ensure the parts cleanness, the standards for contamination and cleanness control shall be established and implemented based on drawing specifications and general specification described in “Guide for establishment of parts cleanness standard”. Standard established shall be agreed between JATCO and supplier using Inspection Standard.

14) “Rule to prohibit from putting part aside” should be set out to prevent from occurring defect and in thorough compliance with the rule.
※ The parts should be placed in the location where undefined place for “putting part side”

Related Guide/Form

Guide for Change Control （S.R-4）
Guide for Production Part Approval （S.R-5）
Guide for Control of Priority Parts and Characteristics in QA table(Quality design sheet) （S.R-7）
Guide for Special Process Control （S.R-9）
Guide for New Product Quality Procedure for Development Stage （S.R-13）
Guide for Special Activity during Launch Period （S.R-14）
Guide for Controlled Shipping （S.R-15）
Guide for Control Plan （S.R-16）
Guide for Inspection Standard, Master Sample （S.R-17）
Guide for establishment of parts cleanness standard （S.R-20）
Notification of Design and Process Change （Form 21）

4.10 Inspection and Testing

1) Before delivering parts, suppliers shall prepare the control plan and inspection standards and submit them to the responsible supplier quality assurance department of JATCO for verification. See the “Guide for Control Plan” and the “Guide for Inspection Standards” for details about implementation.
2) Based on the control plan, suppliers shall carry out “inspection and testing” and “process and product audit”. Records shall be kept.
3) The supplier’s quality-assurance department shall gather and validate all related information for initial-product stage such as prototype, production trials, new-product launch, design changes, and process changes and confirm quality of initial products following the “Guide for Initial Product Control”.
4) Suppliers shall perform all inspections using personnel with probed ability and deploy training and education regularly.

5) The responsible supplier quality assurance of JATCO may visit supplier's facility in order to perform product audit inspection based on drawing and inspection standard.

6) Suppliers shall confirm material chemical composition analysis and any other functional/physical test, etc. in regularly basis, reporting results to JATCO.

7) Supplier shall perform below inspection and report its result to JATCO if JATCO requested.

①Layout Inspection･･･Inspection interval is once a month as a rule.

Raw material parts are inspected as minimum every six months.

②Inspection of all Characteristics in the Drawing shall be perform once a year･･･

＊Durability Test can be excluded for Annual Confirmation with previous Approval from JATCO.

＊Daily data can be used for Layout inspection and Inspection of All Characteristics in the Drawing.

＊"Inspection standard" shall include inspection frequency.

③Inspection of parts cleanness (Contamination test) shall be done once a month or more.

Frequency for Inspection of parts cleanness

Subject parts	Frequency	Comments
JATCO specified parts in JATCO "Quality file"	according to JATCO "Quality file"	especially JATCO specified in JATCO "Quality file" ; Quality Requirement Standard included in JATCO RFQ for Purchased parts
JATCO specified parts	JATCO Supplier Quality Assurance Department specified frequency	JATCO-SQA specified parts
other than above items	once a month	–

④Process Capability Results (Cpk/Ppk) must be deliver to JATCO every 3 months.

A target part indicates from JATCO.

8) Characteristics specified by 3D and profile shown in the drawing shall be measured by supplier's "Noncontact Coordinate Measuring Machine". Basically, measurement result shall be judged directly compared with 3D data of drawing.

For all the CMM and non contact CMM measurements the software required is calculation using Gaussian least squares method.

＊Submitting procedure of inspection result to JATCO.

①Comparison judgement report of 3D data and drawing.

②Electric file of measurement result by "Noncontact Coordinate Measuring Machine"

(Submission method shall be coordinated with Plant Quality Assurance Department of JATCO when supplier does not have "Noncontact Coordinate Measuring Machine".)

Related Guide/Form

Guide for Initial Product Control（S.R-8）

Guide for Control Plan（S.R-16）

Guide for Inspection Standard, Master Sample（S.R-17）

4.11 Control of Inspection, Measuring and Test Equipment

1) Suppliers shall establish and maintain procedures for control and accuracy of inspection for measurement and test equipment which are used for confirming that the part complies with the specifications.
2) Inspection method, measurement and test equipment shall be selected to perform appropriate measure for part characteristics and dimensions.
3) Measurement and test equipment shall be calibrated on a regularly scheduled basis, frequencies of the calibration shall take in account the environment, type of measuring equipment, resolution and importance of the characteristic to be measured and results shall be recorded. Yearly plan for calibration should be prepared and carry out according to the plan.
4) Suppliers shall conduct appropriate statistical verification to analyse the variation of measurement and test equipment, and provide the verification results. The method of statistical verification and judgment criteria shall be consistent with those in the Measurement Systems Analysis (MSA) Reference Manual. For an outline, refer to the “Guide for Measurement Systems Analysis (MSA).”

Related Guide/Form

Guide for Measurement System Analysis（S.R-18）

4.12 Inspection and Test Status

Suppliers’ identification for parts shall be clearly defined as conforming or nonconforming based on inspections and tests results.

4.13 Control of Nonconforming Part

1) In order to prevent wrong use of nonconforming parts, procedures shall be develop, documented and maintained for identifying, listing, evaluating, quarantining, and disposing of nonconforming parts, as well as for notifying appropriate departments.
2) This procedure shall be applied to suspect parts and materials in the same way as to nonconforming parts.
3) If there is a possibility that nonconforming or suspect parts and material have been delivered to JATCO, immediately notify the plant quality assurance department and take corrective actions promptly.
4) If you have no choice but to correct a non-conforming product, please do the following:
・rework：correct the non-conforming product and correct the NG characteristics to OK)
・Re-Process:Remove a part mid-process & reinjecting it through some “Provisional

Operation" or through an operation outside the production line.
(The part could be OK or NG before take out of the process)

Create rework instructions and Re-Process instructions.
Obtain approval from the supplier's quality assurance manager.
Obtain approval from JATCO's purchased product quality assurance department.
If a process change occurs, process change application procedures must be completed and mass production approval must be obtained.

Rework and Re-Process instruction shall be made available for viewing to the responsible personnel. For those parts that with QA table (Quality design sheet) characteristics, 100% inspection shall be performed and retain the records for 10 years. Important security part process are prohibited to be reworked.

5) If you wish to reuse materials or component parts due to rework, etc., please do the following.
Determine whether each material or component can be reused.
Specify materials and components that can be reused.
Create instructions for removing reused materials and components from finished parts.
Obtain approval from the supplier's quality assurance manager.
Obtain approval from JATCO's purchased product quality assurance department.

6) Proposed use or rework of parts which do not conform to specified requirements shall be reported to the responsible purchasing department of JATCO and approved by the form "Proposed Use for Concession" before delivery. This shall be done following the "Guide for Proposed Use for Concession ". Submit a sample when necessary.

7) I f the supplier receives a nonconformity report, the supplier shall know the location of all affected parts in the supply chain, Identify and define disposition together with the plant quality assurance department of JATCO in order to prevent interfering to production activity. In an emergency, the quality assurance department of JATCO may take actions independently of the supplier. (i.e.: inspection by JATCO, inspection by external company with JATCO consigned, etc.).
Additionally, supplier may perform or be requested from JATCO to perform durability test, in the case that nonconforming items are incorporated into JATCO product.
The supplier responsible for all expenses generated due to this activity.

8) JATCO may request to suppliers implementation of control shipping (CS1,CS2) when JATCO judged that quality level of supplier requires this action. Control shipping is requested from the responsible supplier quality assurance department. Method of control shipping shall be coordinated with the responsible supplier quality assurance department using the following "Guide for Controlled Shipping".

Related Guide/Form

Guide for Management of Nonconforming Part（S.R-11）
Guide for Controlled Shipping（S.R-15）

4.14 Corrective and Preventive Action

1) Procedures should be documented and maintained for implementing corrective and preventive actions.
   With regard to preventative action, major equipment for process shall be specified and establish an effectively planned comprehensive preventative maintenance systems.
   The followings shall be included in comprehensive preventative maintenance system.
   ・Maintenance Activity Plan（set out yearly equipment maintenance plan and follow according to the plan.）
   ・Packaging and storing devices, jigs and tools as well as gauges
   ・Possibility of availability of replacement parts for major production devices
   ・Documentation of maintenance objectives, evaluation and improvement cycle
2) If supplier receives information of nonconforming parts from JATCO, the supplier shall take corrective and preventive actions for nonconforming parts due by either within 10 operation days or the date directed by JATCO. Report the results of corrective and preventive actions for nonconforming parts to the responsible supplier quality assurance department or plant quality assurance department of JATCO.
3) Suppliers shall inform to JATCO about implementation schedule of corrective and preventive action to JATCO.
4) Actions taken and controls implemented as countermeasures shall be simultaneously applied (horizontal deployment) to other similar processes, products and global regional plants.
5) Information about nonconformities shall be collected, and utilized for recurrence prevention. (Non-conformity corrective action list, D-FMEA, P-FMEA, horizontal deployment list, and FP standards, etc.)
6) Regarding the case of the Report on Defect Recurrence Prevention (8D-report), Two months later, Please confirm that measures are maintained at your site.
   Then fill in the results in the 8D-report and submit.

4.15 Handling, Storage, Packaging and Delivery

1) The supplier shall achieve 100% on-time delivery against the delivery instructions from JATCO.
2) In order to prevent part damage or deterioration, procedures shall be developed for handling, storage, packaging, delivery, and unloading.
3) Before delivery, the supplier shall establish an appropriate packaging standard and receive approval from the production control department of JATCO.
4) Supplier are responsible to apply anti-rust measures for parts or packaging to prevent from rusting within the period required by JATCO.
   For details, please refer to "LOGISTICS REQUIREMENTS FOR SUPPLIERS (*)" issued by JATCO's Production Control Department.
   If JATCO instructs special rust prevention period, the supplier must follow the instruction.
5) Suppliers shall implement cleanliness control for packaging containers (damage, plastic totes, etc.) to prevent contamination, debris, etc. including any potential cause during transportation.
6) Suppliers shall carry out their packaging setting and cleanness of packaging containers based on

the “LOGISTICS REQUIREMENTS FOR SUPPLIERS” issued by JATCO’s Production Control Department.

7) JATCO will charge the cost to the supplier for any non-conformity within the warranty period (rust, damage, contamination, etc.).

※LOGISTICS REQUIREMENTS FOR SUPPLIERS

Details can be confirmed in JATCO Supplier Portal site.

If you cannot find “LOGISTICS REQUIREMENTS FOR SUPPLIERS“

Please contact SCM (Production control) department.

4.16 Control of Quality Records

1) Suppliers shall document and maintain procedures for the identification, collection, titling, use, filing, retention, and abolition of quality records.
2) Quality records shall be maintained following the “Guide for Control of Documents, Data, and Quality Records” in order to verify conformity with JATCO’s requirements and its effectiveness of the quality system.
3) Retention period of the quality records shall not be less than the period specified by JATCO.
4) Quality records shall be provided if JATCO requests them.

Related Guide/Form

Guide for Control of Documents, Data, and Quality Records（S.R-2）

4.17 Internal Quality Audits

1) Yearly plans for internal quality audits at least once a year shall be prepared and executed in order to evaluate whether the quality activities and their results are as planned, to verify the effectiveness of the quality system its accordant with IATF16949..
   In the case of any complains on nonconformity received from customers and JATCO, frequency of audit shall be reviewed.
2) The internal audit shall include the following items addition to quality management system audit.
   ・Production Process Audit
   Those processes should be audited to deliver the judgement that the each production process has completely followed the control process chart (control plan).
   ・Product Audit
   The product should be audited at the appropriate stage of production and delivery on the specific frequency to verify conformance with all specified requirements such as product measurement, functionality, packaging and label display.
3) If the internal quality audits reveal any deficiencies, immediate corrective and preventive action shall be taken. Their contents and effects of action shall be confirmed and recorded.
4) Submit audit plans and results, if JATCO requests.

4.18 Training

1) Suppliers shall document and maintain periodical training plan for workers, and implement the training in respect to the plan.

2) Certification based on past education/training and/or experience, should be recognized for workers involved in design and development, internal quality audits, and any particular processes.
3) Keep records of training.
4) Effects of training shall be evaluated regularly.
   Following the “Guide for Control of Characteristics in QA Table (Quality design sheet)” for the important characteristics and the characteristics in QA Table (Quality design sheet) shall be evaluated.

<Related Guide/Form>

Guide for Control of Characteristics in QA Table (Quality design sheet) (Supplementary Rule-7)
Characteristics in QA Table (Quality design sheet) Understanding Check Sheet (Form 27)

4.19 Servicing

No provisions.

4.20 Statistical Control

1) Clarification of necessity
   The supplier shall control process capability and quality characteristics of the products and clarify the necessary statistical methods. The supplier shall also establish and maintain procedures for implementation and control in their application.
2) Select the process for adoption of statistical control
   When considering the assurance methods during the production preparation stage, necessary statistical control shall be selected and described into the Control Plan.
3) Enhancement of continual improvement using statistical technique
   Supplier shall take continual improvement of quality assurance using the control plan, process capability, statistical control.

S.R. - 1: Guide for Assignment and Notification of Responsible Person for Quality Assurance

1. Outline

The supplier shall assign the responsible person for quality assurance and inform JATCO.
If Responsible Persons for Quality Assurance had changed inform JATCO immediately.

2. Qualifications and Assignment of Responsible Persons for Quality Assurance

The following personnel should be assigned to be responsible for quality assurance:

1) Highest responsible person for QA:
   The person who has responsibility and authority concerning quality assurance of supplied parts. (In principle, this person should be in the position of senior management at least).
2) Responsible person for QA:
   The person who has been given overall company-wide responsibility and authority concerning quality assurance. (In principle, this person should be in the position of general manager.)
3) Deputy responsible person for QA:
   The person assigned as necessary in head office or each plant to take concrete action concerning quality assurance of supplied parts.

3. Assignment of a window person for quality assurance

A person shall be assigned to act as a liaison with JATCO at the head office, manufacturing plants, and sales department.

4. Report to JATCO

1) The supplier shall submit the “Report on Assignment/Change of Responsible Person for Quality Assurance” to JATCO with the responsible persons and the window person for quality assurance. Emergency contact reachable such as night time or holiday shall be registered.
2) This report shall be submitted to the responsible supplier quality assurance department.
3) In the case of a company name change, please contact Purchasing Division and then submit ‘Report on Assignment/Change of Responsible Person for Quality Assurance’(Form-1)

<Related Guide/Form>

Report on Assignment/Change of Responsible Person for Quality Assurance (Form-1)

S.R. - 2: Guide for Control of Documents, Data, and Quality Records

1. Outline

   This guide prescribes the procedures for control documents, data, and quality records.

2. Preparation of Documentation

   Documents and Data shall be prepared as follows:

Subject Part	All parts, prepare a set of documents for each part and each process.
Preparation Timing	Prepare control plan before VC lot, prepare process instruction and inspection standards before 1st production trial.
Revisions	Review them through each stage of production preparation and complete them before PT1. Review them for each design change, process change, kaizen, etc.,

   Documents: Standard/Manual of Inspection standard, control plan, procedure, process instruction, etc.

   Data: Inspection data of automatic measuring equipment, certification records etc.

3. Control of Documents

   1) Determine departments responsible for preparation, approving, and control of documents. The department responsible for control of documents shall regularly (once a year) confirm its maintenance status (changes, abolition, insufficient maintenance, etc.) of documents, including external documents, and control the newest editions. And if any nonconformities are found, supplier should immediately collect.

      External documents: customer's technical standards, customer's quality control standards, supplied drawings, engineering specifications, etc.

   2) Documents shall be retained for 10 years from the end of order (production stop).

      However, if there is a Individual request, please follow the instructions.

4. Control of Data and Quality Records

   1) Data and quality records shall be identified, titled, filed, and kept for the periods established beforehand.

      - Quality records (i.e.: control plan, results of tests and inspections) shall be kept for 5 years from the date they were prepared. However, lot-control data, tests and inspections result, defect records, etc. for Priority Parts and Critical safety parts shall be kept for 10 years from the date they were prepared.

        However, if there is a Individual request, please follow the instructions.
      - Records of internal audits and management reviews shall be kept for 3 years.

   2) Record includes electronic files, floppy disks, network servers, magnetic drums, optical disks, microfilm, and other forms.

   3) Quality records shall be kept in a facility that prevents their deterioration, damage, or loss. They shall be kept easily access for search and storage.

5. Submission of Documents, Data, and Quality Records

   Submit documents, data, and quality records, measured products when requested by JATCO.

S.R. - 3: Guide for the Use of Suppliers

1. Outline

This guide describes the procedures to be used when the supplier purchases materials or products from Tier 2, Tier 3 and subsequent suppliers (hereinafter “sub tier suppliers”).

2. Establishment of Quality Control Procedure for sub tier suppliers

In principle, the contents should be equivalent of this standard and assure sub tier suppliers.

3. Implementation of Audits

1) In order to maintain quality control level, audits shall be carried out regularly (At least once in a year) or whenever needed to confirm and evaluate the quality control level.
2) Results of the audit shall be submitted when requested by JATCO.

4. Standard of using sub tier suppliers

Suppliers shall follow the requirements below when using sub tier suppliers.

1) Using of sub tier suppliers is the responsibility of the supplier.

2) Register all sub tier suppliers involved in all processes, all components and all material suppliers in the manufacture of parts under contract with JATCO in the Supplier Chain Registration Control Sheet and submit to the responsible supplier quality assurance department.

3) When JATCO designates sub tier suppliers, the supplier shall purchase the material from the designated sub tier suppliers.

4) When supplier changes sub tier suppliers after started volume production, follow the procedure of the “Guide of Change Control”.
In that case, supplier shall resubmit “Supplier Chain Registration Control Sheet”

<Related Guide/Form>

Guide for Change Control (S.R-4)

Supplier Chain Registration Control Sheet (Form-47)

5. Requirements for Using sub tier suppliers

1) Consider the quality requirements of the part and requirements of the production (methods,

peculiarity of manufacturing etc.) when selecting sub tier suppliers.

2) Conduct evaluations of sub tier suppliers. Engineering level (production experience/result, production engineering, qualifications, etc.), production capacity (capability to meet production volume, delivery and process capability), quality control level, and other considerations.
3) Make clear the sharing of roles regarding quality assurance between the supplier and the sub tier suppliers.
4) Conduct receiving inspection on parts (including raw material) supplied by sub tier suppliers.

6. Verification by JATCO

It is the responsibility of the supplier to manage the sub tier suppliers. However, JATCO may conduct audit of these sub tier suppliers.

S.R. - 4: Guide for Change Control

1. Outline

The procedure for change control, including the contents below, shall be documented and maintained in order to prevent any trouble caused by lack of control and consideration at Design and Process change

2. Control of Design Changes

1) Scope

(1) Design change of JATCO's specifications (directed by JATCO)

(2) Design change at supplier's request

Including component change of proposed drawings based on quality improvement and cost reduction activity of supplier.

(3) Other changes considered important by the supplier

2) Activities Concerning Changed Parts

Conduct quality assurance activities following the "Guide for New Product Quality Procedure for Development Stage" and the "Guide for New Product Quality Procedure for Production Preparation Stage."

<Related Guide/Form>

Guide for New Product Quality Procedure for Development Stage (S.R-8)

Guide for New Product Quality Procedure for Production Preparation Stage (S.R.-12)

Guide for Initial Product Control (S.R.-13)

3) Application to JATCO

(1) Design change at supplier's request shall be coordinated with design department of JATCO beforehand. "Design and Engineering report" shall be submitted at least 6 months prior to target of adoption date to purchase department of JATCO.

(2) The following design change form shall be submitted "Design and Engineering report" to purchase department of JATCO.

A, Application of design change based on production problem. : Before 6 months

B, Application of design change based on defect countermeasure. : Immediately

C, Application of design change based on VA. : Immediately

Judgment period is necessary for accept or not accept of the adoption judgment etc. according to the type of change. Target timing of adoption may be changed. Therefore there is a possibility that adoption cannot follow the target timing. If supplier can estimate judgement period could take a long time, application shall be done including judgement period. Document shall be submitted to purchase department of JATCO.

(3)Where to submit the application

If you are dealing same product with each JATCO site (Japan / Mexico / Thailand / Guangzhou / Suzhou), please apply individually to each JATCO site.
(Please get PSW individually on a commercial basis.)

<Related Guide/Form>

Part Submission Warrant (PSW)（Form-2）
Notification of Design or Process Change（Form-21）
Description of Design or Process Change（Form-22A）
Comparison of Change in Process Sequence（Form-22B）
Design and Engineering Report (Form-42)

3. Control of Process Changes

For the Process Changes, JATCO will control and give a Part Submission Warrant (PSW), please confirm detail on the below points.
(This applies to all production process including sub tier suppliers)

Note;
As a general rule, PT1 ~ SOP ~ SLP
Prohibit design / process change.
If you need to these change,
Please consult with JATCO supplier quality assurance department.

1) Scope

Process Change Management applies to all production process including sub tier suppliers.

Item	Description
(1) Modifications and transference of the process and addition of new process	-Change of manufacturing process or facility location change -Modifications, transference or new installation of machines/facilities -Change of supplier for parts, materials or services.
(2) Change of manufacturing method/characteristics	-Change of methods/conditions for any production/working process. -Change on equipment conditions for any process. -Change of test/inspection method -Addition of any rework by non-regular process.
(3) Change of worker	-Change of operator -Relocating of operator

2) Activities Concerning Changed Parts

Item	Contents
Considerations before changing	-Clarify the part to be changed, the reason for, and contents of the change. -Prepare and distribute a plan of adoption change. -Consider and establish the quality objectives and assurance methods. (Quality Assurance Plan for New Product) Establish trial timing, methods, number of samples, and subject parts list. Prepare documents (Process FMEA, inspection standards, control plan, process instruction, etc.) Verify the process, the product quality, and the process capability. Determine activities, period, and release criteria for “Special Activity during Launch period”. Prepare plans for education/guidance of workers and inspectors. Prepare plans for internal audits (process change feasibility decisions, maintenance verifications). -Prepare Capacity Plan -Prepare Reliability Test Plan and Report -Prepare Comparison of 4Ms
Contents of activities	Conduct activities based on the above plans, and verify the items below. Coordinate with the related department of JATCO for quality verification. -Decide whether or not to implement the process change based on verification results. -Prepare control documents. -Record history of changes. -Verify products/processes and record results. -Confirm the quality level. -Conduct internal audits to verify the quality system. -Consider the necessity of submitting a changed-part sample beforehand, and submit one if needed.

Process FMEA shall be reviewed when process change plan is made.

3)Process change for which application to JATCO is necessary

(1)Process change for which application to JATCO is necessary is as follows. When there is hesitation about deciding whether or not application is required, ensure to contact and confirm with JATCO without making your own judgement.

(This applies to all production process including sub tier suppliers)

-Changes concerning the characteristics of Critical safety parts and Priority Parts
-Change to new technologies/materials which the supplier has no experience
-A new production line or new factory
-Use of new sub tier suppliers and change of sub tier suppliers
-Changes which the supplier thinks will have a large effect on quality（Example: Due to malfunction of equipment, suppliers use a temporally process, production restart over 2 month stopped）
-Relocation of facility
-Rework by non-regular process.

-Addition, Replacement and Modification of mould(remodel)

-Addition, Replacement and/or modification of Jig and Tool. (Exclude expendable/consumable items that are replaced on Daily Basis)
-Layout change in the production site
-Setting up, modification or relocation of mechanical devices
-Change of machining or assembly method
-Change of heat treatment or welding condition, surface treatment, press, clinching
-Change of material suppliers and maker, change of name of material.
- Addition, Replacement and modification exclusive inspection Items.
-When work formation changes more than 50% (i.e.: 1 shift is changed to 2 shifts or vice versa).
-When JATCO has requested submission (For example, "BCM (Business Continuity Management)" or Reproduction after long-term stop production, etc.)

“Process control” about other items shall be conducted and recorded by supplier.

(1)Application Lead Time

Category		Content	Application to JATCO
1	General changes	Changes other than Category 2, 3, and 4 changes	At least 100 days prior to the start of initial product delivery
2	Changes related to materials and related parking parts.	-Changes in material suppliers and makers -Changes including name changes to materials	At least 180 days prior to the start of initial product delivery
		*Because prior auditing by the JATCO Design Department will be required, submit Design and Engineering Report to the Purchasing Division beforehand.	
3	Changes related to ATCU/SOL/belt Risk Control Parts	-ATCU, includes separate type ATCU. SOL/Belt/Chain/BRG for Pulley /Tapered roller BRG/clutch/break	At least 180 days prior to the start of initial product delivery (in principle)
		*Because prior auditing by the JATCO Design Department will be required, submit Design and Engineering Report to the Purchasing Division beforehand	
4	Supplier facility/equipment change	-Equipment transfer (within the company). --Facility transfer (within Sub tier). -New site location.	At least 180 days prior to start of initial product delivery

*The above lead-time is an average number of days required.

* JATCO will follow our own Customer Specific Requirement for Approval; any change need to be under this consideration, suppliers shall consider this timing under the adoption schedule.

If it is anticipated that longer time will be required due to quality verification, etc., be sure to submit in advance taking into consideration the time required for such verifications.

4) Application to JATCO

(1) Documents to be submitted are “Notification of Design/Process change”, “Descriptions of Design/Process change” and “4M List” and “List of Changing Point” Any other documents to be submitted other than the above listed shall be requested on “Notification of Design/Process change” by the supplier quality assurance department of JATCO.

If there are multiple target parts, enter the representative part number in the part number column of the "Notification of Design / Process Change (Form 21). And enter the aditional information to ”Design･Process change applicable parts/model list (Form 22C).

Form 22C is a reference form, but please be sure to fill in the "part name", "Jatco part number" and "Jatco delivery destination" in the form as mandatory items.

(2) Where to submit the "Notification of Design / Process Change

Supplier quality assurance department of the production site of delivery destination
If you are dealing with multiple JATCO site (Japan / Mexico / Thailand / Guangzhou / Suzhou), please apply individually to each site.
Please get PSW individually on a commercial basis.

(3) JATCO will return an approved copy of the Notification of Design/Process Change to the supplier. Proceed with preparations as instructed by JATCO on the notification.
Process change timing will start once is approved by JATCO Supplier Quality Assurance department.
Additionally, JATCO may request supplier to participate in Purchased parts DR activity, in such case supplier should provide their support and coordinate with Supplier Quality Assurance department.

(4) Proceed with the process changes after receiving indication from JATCO.
Supplier shall submit the Parts Submission Warrant (PSW) before mass production.
Supplier shall start mass production after approved by the responsible supplier quality assurance department of JATCO each site.
The submitted and approved documents shall be kept for a period of 10 years or customer's Individual request from the end of production orders (EOP).

(5) Follow the procedure for initial product control when implementing the process change. Parts Submission Warrant (PSW) and Initial Product Delivery Notice (IPDN) shall be attached to initial product delivery parts. Consult with the plant quality assurance department for the method of initial product delivery.

(6) If JATCO site have multiple factory and when supplier already deliver product to other factory of JATCO same site, Copy of Notification of Design or Process change and Parts Submission Warrant shall be submitted with initial product delivery notice and Initial product quality confirmation report.
JATCO site are Japan / Mexico / Thailand / Guangzhou / Suzhou.

(7) In order to prevent parts supply troubles, please implement progress management including changes in outsourced processes. (Schedule management, inventory management, etc.)

(8) In case of process change, regardless of JATCO (e.g. order decrease) or Supllier convenience, If 3-months over since the due date entered on the "Notification of Design / Process Change (Form 21)“, and the "Part Submission Warrant(Form 2)" has not been submitted to JATCO, the project will be cancelled.
Suppliers should contact to Supplier Quality Assurance Section before overdue 3-months or at the time of the change.

(9) JATCO shall not be liable for the process changes. Approval for process changes by JATCO does not absolve the suppliers of the ultimate responsibility of its and its sub tier suppliers and sub-contractors quality performance.

Note: It is responsibility of the supplier to confirm that the process change application has been received and approved by JATCO. The supplier may also be asked to provide a

detailed explanation of the contents as required by JATCO.

<Related Guide/Form>

Guide for Production Part Approval (S.R.-5)
Part Submission Warrant (Form 2)
Notification Design / Process change (Form-21)
Description of Process Change (Form-22A)
Design･Process change applicable parts/model list (Form-22C)
4M List (Form 61)
List of Changing Point (Form-63)

5) Verification by JATCO

When JATCO deems it necessary, the supplier shall accept audits of the process change activities and results.

<Related Guide/Form>

Process Audit Improvement Plan and Report (Form-46A)

6) System audit by JATCO

①JATCO may conduct system audit for new sub tier supplier, if JATCO needs. In that case, the Supplier shall change after system audit by JATCO.
(JATCO inform instruction of system audit by Notification of Design and Process change.)

②If the supplier is to implement process changes at an overseas supplier or overseas subsidiary (sub-contractor), JATCO will perform a Quality System Audit before the supplier proceeds with preparations for the transfer of process.
Based on the Quality System Audit, JATCO will decide whether or not process changes are possible (in terms of the system) and will require improvement of any items indicated in the evaluation.

S.R. - 5: Guide for Production Part Approval

1. Outline

This guide prescribes the process for new parts (including service parts), design change parts and process change parts requested by JATCO to be approved. These parts are made from volume production process after preparation period.

<Related Guide/Form>

Guide for Change Control (S.R.-4)

・Part Submission Warrant (PSW)（Form-2）

2. Definition of Volume Production Parts

Volume production parts are those parts manufactured by off tool/off process (moulds, equipment, tools, inspection equipment, workers, full volume cycle time, etc.). For production parts approval, make each document from production trial. Volume of production trial shall be at least 300 parts and/or one complete shift.

3. Condition of Production Part Approval Process

Before start of volume production, the supplier shall submit PPAP document including Parts Submission Warrant (PSW) to the responsible supplier quality assurance department of JATCO to receive approval. The supplier shall start production only after receiving PSW approval.
The submitted and approved documents shall be kept for a period of ten years from the end of production.

1) Approval:
   Production and delivery the volume production parts are approved.
2) Temporary Approval:
   Production and delivery are approved subject to conditions. (A specified time or specified volume).
3) Not Approved:
   Production and delivery the volume production parts are not approved.

Note

・In case of “Temporary approval” and “Not approved”, the supplier shall resubmit Parts submission warrant according to the instructions of JATCO.

4. Definition of PPAP Terminology

Production Part Approval Process Package (PPAP)	The result of the PPAP process is a series of documents gathered in one specific location (a binder or electronically) called “PPAP Package”. JATCO confirms that package. When JATCO judges OK for starting volume production, JATCO approves by PSW (Parts Submission Warrant). Production part approval process package is completed after PSW approval.
Part Submission Warrant (PSW)	PSW (Part Submission Warrant) is the application with the PPAP documents for proving the start of volume production to JATCO. JATCO judges and approves based on those documents to supplier.

5. Submission Contents

1) PPAP Documents and Sample parts, etc

・Documents and sample parts, etc to be submitted. are shown in the “List of Documents and Sample parts, etc to be Submitted.” below. Forms that are “reference” in the “Format” column of the list can be submitted in your company form.

・JATCO instructs "Notification Design / Process change" on the necessary materials for "Part Submission Warrant(PSW)" and returns it as "Design / Process change instructions". Please submit the document with "○" in the instruction column of "Design / Process change instructions" to the designated department.

・JATCO indicates submission document for new parts using “Guide for New Product Quality Procedure for Production Preparation Stage (S.R-13)”. JATCO may require documents other than “Submission document table” based on a customer's demand. (Ford, Renault, etc.)

List of Documents and Sample parts, etc to be Submitted

No.	Documents and Sample parts, etc	Format	Document Format	S.R. No.
1	Part Submission Warrant	Prescribed	Form - 2	5
2	Notification Design / Process change	Prescribed	Form - 21	4
3	Description of Design / Process Change	Prescribed	Form – 22A	4
4	Comparison of Change in Process Sequence	Reference	Form – 22B	4
5	Design･Process change applicable parts/model list	Reference	Form – 22C	4
6	Initial Product Delivery Notice	Prescribed	Form - 13	8
7	Initial Product Quality Confirmation Report	Prescribed	Form - 14	8
8	Process Capability Study Report	Reference	Forms -15	13
9	Drawing full layout inspection (n=1)	-	-	8
10	Quality Assurance Plan for New Product	Reference	Form - 3	13
11	Control Plan (Process flow)	Reference	Forms - 6	16
12	Control Plan	Reference	Forms - 7	16
13	Process FMEA (AIAG or VDA or AIAG&VDA acceptable)	Reference	Form - 8	13
14	Inspection Standard	Reference	Forms – 24 to 26	17
15	Approval Report for Limit Sample	Prescribed	Form - 17	17
16	Supply Chain Registration Control Sheet	Prescribed	Form - 47	3
17	Plan for Special Activity during Launch Period	Reference	Form - 33	14
18	Measurement Systems Analysis (G-R&R Data Sheet)	Reference	Form - 18	18
19	Measurement Systems Analysis (G-R&R Report)	Reference	Form – 19A	18
20	Process Audit Improvement Plan and Report	Prescribed	Form - 46A	13
21	Design note	Prescribed	-	13
22	Process Preparation Plan and Report	Prescribed	Form - 31	13
23	Quality Control Indices for Production Preparation	Reference	Forms - 9, 10	13
24	Parts Karte	Reference	Forms -11, 12	13
25	Reliability Test Plan and Report	Reference	Form - 5	12
26	Contamination Task Sheet (Contamination map)(※1)	Prescribed	Form - 32	13
27	Design FMEA (AIAG or VDA or A IAG&VDA acceptable)	Reference	Form - 4	12
28	Material Test Report	Prescribed	Form - 53	12
29	Status received MDSs (IMDS)	Prescribed	-	5
30	Supplier’s Design Record	-	-	12
31	Run @ Rate Analysis	Reference	Form - 50	9
32	4M List	Specified	Form 61	13
33	QA table (Quality Design Sheet)	Specified	Form 38	13
34	QA table characteristic "Consent evaluation" check sheet	Specified	Form 27	13
35	Initial Sample (n= 3)	-	-	8
36	Lot Control Card(※2) (attach to the initial sample product.)	-	-	6
37	Process change self audit check sheet	-	-	4

※1 With regard to extraction of contamination issues sheet, the result of verification of residual burrs check sheet should be attached.

※2 Lot control parts is the target. (Refer to “S.R.-6: Guide for Traceability Control”)

Note

・JATCO may require that the above document formats are exchanged. The responsible supplier quality assurance department of JATCO will inform the supplier when this is the case.

・JATCO will also inform the supplier if the forms are to be completed in Japanese or English.

・”Approval Report for Limit Sample” and “Inspection standard” will be submitted after JATCO approval. (JATCO will confirm signature of JATCO.)

・Supplier will be submitted necessity documents based on “JATCO Green Purchasing Guide Line”, if JATCO requires.

・All documents marked as reference on format column, shall cover at least all items described in the example format.

・”Status received MDSs (IMDS)” is submitted to JATCO after confirmed accept by JATCO. Status received MDSs (IMDS) can be printed from IMDS home page. Please confirm “IMDS_Guideline (Latest ver.) about details of IMDS input.(“IMDS_Guideline” can be confirm in “Supplier portal”.

・Any additions or changes should be clearly identifiable by marking in the each submitting documents.

1) Submit To:

Supplier Quality Assurance Department of JATCO

However, the following shall be submitted to Plant Quality Assurance Department.

5. Initial Product Delivery Notice

6. Initial Product Quality Confirmation Report

31. Initial Sample Parts

32. Lot Control Card

S.R. - 6: Guide for Traceability Control

1. Outline

This guide prescribes the procedures for Traceability control.
Traceability control procedures shall be documented and maintained in order to have a clear record of delivered products, from receipt of materials to delivery (including inspection and testing results), to control “first-in first-out” and to make quality records clear.

2. Subject Part for Traceability Control

Traceability Control shall be conducted for all parts delivered to JATCO or to specified delivery sites.

3. Types and application of Traceability Control

Individual(Serial) control	Method of control by assigning a unique number to each individual part. Note;5.4) JATCO shall instruct Special control to supplier.	Parts specified by JATCO
Group(Lot) control	Method of control by assigning a number to each manufactured group (lot). Note;5.4) Special control may be instructed.	Other than above-mentioned

4. History Management of Traceability Control

1) “Serial Control Parts”, the connection between each process, such as material charge, processing lot, heat treatment lot, and shipping lot, should be identified for each individual product.
2) “Lot Control Parts”, the maximum limit units are (1) same part number, (2) same specification, (3) same material, (4) production/processing by the same machine/equipment, etc., and (5) production/processing shift on the same production/processing date, etc., so that the connection between each process can be identified as a lot.
However, for parts that include a heat treatment process and have been specified by JATCO, please implement lot control that shows the connection between the heat treatment lot and the material charge.
(For the specific implementation method, please coordinate with Jatco Supplier Quality Assurance Department)

A lot is "a group of products that are manufactured under the same conditions and therefore can be considered to be of the same quality.”

5. Establishing Serial Numbers, Lot Numbers

1) The supplier shall set the Serial numbers or Lot numbers so that the parts quality history can be tracked and searched.
2) Serial numbers or Lot numbers shall be composed of a combination of numerals and alphabet letters.
3) Product Serial numbering or lot-numbering shall be established based on “Section 9”.
   If you need to discuss about Serial-numbering or Lot numbering, please contact JATCO Supplier Quality Assurance Department.
4) JATCO may specify the method of control to enable Traceability Control for the specially designated parts. (i.e. 2D barcode, QR code etc.)
   Specified parts information shall be coordinated with the responsible ~~plant~~ Supplier Quality Assurance Department)

6. Display of Serial･Lot Numbers

Item		Individual(Serial) Control Parts	Group(Lot) Control Parts
Scope		Priority parts, Parts instructed by JATCO	All parts except those specified at left.
Display the Serial･Lot Numbers	Actual Parts	Each number shall be stamped, printed, etc. in a way that cannot easily be erased.	Lot umber is unnecessary.
	On the box	Lot number is unnecessary.	A “packaging label” shall be fixed to each of the smallest packaging units for delivery. The identification number is printed on this card. ･Attach a *Lot control card to the parts specially specified by JATCO.

*Lot control card indicates lot number.

(Including 2D Barcode, QR code, etc.)

7. Records of Traceability Control

Traceability Control records shall be retained so that the supplier can quickly trace/search the product history when necessary.

Record	The lot number, die number, the dates of manufacturing, inspecting, delivery, and the product amount shall be recorded in the record sheet for each product.
Search	It shall be possible to complete searches of ~~Individual~~ Traceability Control parts within two hours from the time of request.

The retention period of these records shall be based on the “Guide for Control of Documents, Data, and Quality Records.”

8. Delivery Control
   1) The contents of each of the smallest packaging units for delivery (pallet, etc.) shall belong to the same lot.
   2) If for some unavoidable reason, lots must be mixed in the same packaging unit for delivery, each lot shall be separated and partitioned. The maximum is 2 lots per packaging unit.

9. Example of Establishing Serial numbers, Lot Numbers
   1) Individual(Serial) Control Parts
      A) The number of digits shall be 10 digits or less and shall be composed of numerals and alphabet letters.

      B) Example of Identification sequence
         (1) Line-number: Manufacturing line numbers shall be shown 0-9.
         Example: No. 4 line → 4
         (2) Month: January-December shall be shown 1-9, X, Y, Z
         Example: December → Z

         (3) Production sequence: These 5 digits are a continuous number beginning at 00001 and showing the product No. for each month in the sequence of production.
      C) Example
         4Z12003: No. 4 line, December, 12003rd product of the month
   2) Group(Lot) Control part
      A) The number of digits shall be 10 digits or less , and composed of numerals and alphabet letters.
      B) Example of Identification sequence
         (1) Year: The last digit 0-9 of the current year
         Example: 1998 → 8
         (2) Month: January-December should be shown 1-9, X, Y, Z
         Example: January → 1, November → Y
         (3) Day: The day is shown 01-31 or 1-31
         Example: the 15th → 15
         (4) Supplier's mark: Choose one alphabet letter

(5) In cases where it is difficult to identify (1) and (2), the year and month may be shown as a single digit.

(1) Even years' months Jan.-Dec. are shown using letters A-M
Example: Jan., 1998 → A

(2) Odd years' months Jan.-Dec. are shown using letters N-Z
Example: Jan., 1999 → N

(6) Other: The supplier may use the last digit for its own purpose.

C) Example

(i.e. 1) 8Z15NA: 1998, January 15, Maker N, Process A

(i.e. 2) A18N4: 1998, January 18, Maker N, Process 4

3) Specially designated parts

JATCO will instruct specific methods for production preparation activities for specially designated parts separately. (2-dimensional bar code, etc.),

10. Report to JATCO

1) For each production/delivery of traceability control parts, the supplier shall submit the "Notification of Delivery-Parts Lot Control" to the Supplier Quality Assurance Department of JATCO.

2) If there are any changes against the contents of this notification, add the changed items to the document, submit it to the Supplier Quality Assurance Department

<Related Guide/Form>

Notification of Delivery-Parts Lot Control (Form-23)

S.R. - 7: Guide for Control of Priority Parts and QA table (Quality design sheet) characteristics

1. Outline

This guide prescribes the procedures for Priority Parts and QA table (Quality design sheet) characteristics.

In order to ensure the quality of Priority Parts and QA table (Quality design sheet) characteristics, the following control shall be done.

2. Definition of Priority Parts and QA table(Quality design sheet)※ characteristics.

※The QA table(Quality design sheet) The QA table (Quality Design Document) is the addition of the following to the conventional QA table.

・Agreement on the Importance of Characteristics; Jatco Development and Supplier

・Confirmation and agreement of consistency with standards and forms;
Supplier in-house (Production technology with Manufacturing)

1) Priority Parts have important characteristics related to safety of vehicle and law. Special control shall be executed for quality control and production control of Priority Parts.
2) Parts with QA table (Quality design sheet) characteristics have Critical safety characteristics related to important fit of function of the unit or requirement from customer. Special control shall be executed for quality control and production control of parts with QA table (Quality design sheet)characteristics.
QA table (Quality design sheet)characteristics include QA-Characteristics and Semi-QA Characteristics.
(importance ; QA Characteristics > Semi-QA Characteristics > General characteristics)

3. Selection of “Quality Design Sheet characteristics” and QA table(Quality design sheet) characteristics

First, JATCO select important characteristics from the following point of view, and notify/ shares by “Quality Design Sheet” the purpose of the Design section to the Supplier’s Quality Assurance person in charge.

Please share these characteristics with the production plant, and indicate the result in the QA table (Quality Design Sheet) and submit it at the time of submission of S.R.-13.

Next, the JATCO design department selects highly sensitive characteristics from the "Quality Design Sheet" and supplier shows from the JATCO supplier quality assurance department in the QA Table(Quality design sheet).

1) Characteristics related to serious claims such as vehicle fires, vehicle not driving, and unexpected vehicle movement
2) Critical safety characteristics s of Critical safety parts
3) Characteristics related to parts which contains new mechanism, new materials, or new functions

4) Characteristics related to a problem during the development stage
5) Characteristics related to serious delivery claims and market claims
6) Characteristics related to important failure of similar unit.
7) Characteristics related to difficult or complex of manufacturing method.
8) Customer interface characteristics.
9) Characteristics specified by JATCO's customers. (S-Characteristic)
10) Characteristics related to judge to "Q" in the design FMEA

The QA Table (Quality design sheet) is used as a tool to transfer the design intent to the production engineering and production departments, and suppliers shall establish controls for those characteristics with a reliable process quality assurance.

If there is anything unclear about the contents of the QA Table (Quality design sheet), suppliers should contact the responsible design department of JATCO.

<Related Guide/Form>

QA Table (Quality design sheet) (Form-38)

4. Agreement on the items described in the QA table (Quality design sheet)

In regards to Quality Design Sheet items, agreement between supplier and Jatco (R&D and QA Dept.) is made prior Design Notice Release.

1) Important Characteristics

Agreement on the severity of characteristics and failure modes related to defined characteristics between JATCO R&D and suppliers.

2) Control of defined Characteristics

Supplier should consider appropriate control method based on the severity of defects, occurrence frequency and degree of detection according to the concept of process FMEA.

Jatco (QA Dept. & R&D) and supplier shall agree on control method based on it's the result. (Alternative characteristics, measurement method etc.)

3) Characteristics/characteristics Value

Drawing and QA table (Quality design sheet)

Supplier agree the possibility to produce on the quality control method of listed characteristics.

Agreement on the characteristics/characteristics value that supplier can produce and ensure the quality including the characteristics defined in the drawing and QA table (Quality design sheet).

Note

For the area where the items are changed due to design modification, it should be re-approve prior issuance to QA table(Quality design sheet). Proposal for control method shall be prepared in advance.

5. Indication of the QA Characteristics in a documented standard.

Indication shall be added to standards and documents such as (FMEA, Control plan, Inspection Standard, Operation manual, Check sheet, etc.) for used document at production preparation stage and volume production. Controls added into standards for those characteristics shall be identified as "QA".

	Important characteristics	QA Table(Quality design sheet)characteristics See "QA Table(Quality design sheet):Form38"from JATCO			Semi-QA characteristics/ General Characteristics
		Critical safety characteristics	Requirement characteristics from customer (S-Characteristic)	Other than Critical safety characteristics and Special Characteristics	
Marking for Drawing	Environed by "□"	Environed by "Wave line"	-	-	-
Marking for Standards		Critical	S	Q	-
Marking for Packaging	The above symbol is marked on the delivery parts card, pallet, and parts box	-	-	-	-
Other	Size of the marking is 7mm or more in diameter, visually verifiable	-	-	-	-

6. Control of "Important characteristics" and "QA Characteristics and Semi-QA Characteristics in QA Table (Quality design sheet)".

The supplier shall conduct the following activity in order to assure compliance of required "Important characteristics" and "Characteristics in QA Table (Quality design sheet)" by the responsible supplier quality assurance department of JATCO. Confirmation result of "Characteristics in QA Table (Quality design sheet)" shall be submitted in accordance with instructions from JATCO.

1) Clarification of Process Control Points

In order to ensure assurance of "Critical Safety Parts Characteristics" and "QA table (Quality design sheet) Characteristics", check the conformity with the process control characteristic

value and clarify the point of process control(measurement point, its methods and frequency etc.) in the control process chart.
Inspection frequency established for those characteristics need to cover all process variables (shift change, tool change, start up, etc.).

2) Description and Indication to documented standards
Please include the documents used in actual work (FMEA, inspection standard, control plan, process instruction, check sheets, etc.) Indicate “Critical safety parts” and QA table (Quality design sheet) characteristics, enhance the awareness of the worker.

3) “Quality Design Sheet” and “QA Table (Quality design sheet) characteristics” for Workers’ Education and Evaluation of Understanding level.
There are “reasons for the importance of characteristics” and the “problems that may occur as a result of not compliance with the specifications (What can go wrong with vehicle and trouble caused for the customer) listed on the QA Table (Quality design sheet). Based on these explanations, education shall be conducted regarding to function/importance of characteristics and process control points (measurement points and methods, etc.). Through this education, the workers’ awareness of rule-observance and sensitivity to abnormalities shall be increased. The results shall be recorded.

4) Please evaluate the process capacity during the safe launch period.

<Related Guide/Form>

Characteristics in QA Table (Quality design sheet) Understanding Check Sheet (Form-27)

7. Ensuring and Maintaining Process Capability

(1) Process-capability control for “Important characteristics” and “Characteristics in QA Table (Quality design sheet)” shall be kept based on “Guide for New Product Quality Procedure for Production Preparation Stage”. Process capability shall be confirmed every 3 month as a rule. When JATCO requests, process capability shall be informed to JATCO. JATCO directs a target part.

(2) After Special Activity during Launch Period, SPC (Statistical process control) should be used for daily control of “Important characteristics” and “Characteristics in QA Table (Quality design sheet)”. For further confirmation

If you do not need to manage with SPC, it is as follows.
-Capability Analysis above of 2 (Cpk and Ppk) (Capability Analysis needs to be performed according to 4.10. 7) ④)
-Content Value. (E.g. Number of turns, number of contaminant count etc.)
-100% Inspection Processes.
- Characteristics that could be agreed with JATCO.

Note:Please agree with JATCO regarding the conditions for process capability calculation based on the following.

-Number of measurements n≧100
-Extraction target: 25 or more lots with a production period of 2 weeks or more and including lot-to-lot variation
*If production is low, the number should be 30 or more.
(Cumulative number from evaluation start lot)

In above case please describe in the remarks column of “Inspection Standard” that SPC is unnecessary.
If Cpk becomes 2 or less in the process capacity evaluation every 3 months, please resume SPC.

<Related Guide/Form>

“Guide for New Product Quality Procedure for Production Preparation Stage” (S.R.-13)

8. Prohibition of using sub tier suppliers for “Priority Parts”

Using sub tier suppliers for “Priority Parts” is prohibited as a rule. Control of the QA characteristics is responsibility and shall be carried out by supplier.

9. Record Retention

Lot Control records, inspection and test result reports, concern history records, etc. for “Characteristics in QA Table (Quality design sheet)” shall be kept for 10 years.
However, if there is a customer's Individual request, please follow the instructions.

10. Self-Audits

As a rule, audits for Priority Parts and parts with “Characteristics in QA Table (Quality design sheet)” shall be conducted at least once every 6 months and audit records shall be kept. Audit result shall be submitted to JATCO, when JATCO requested.

Below is the Quick reference table for S.R.-7

Quick reference table for S.R.-7	QA Characteristics			Semi-QA Characte-ristics	(Ref.) General Characte-ristics
Items	Critical safety Characteristics	Requirement characteristics from customer (S-Characteristic)	Others		
4. Agreement on the items described in the QA table (Quality Design Sheet)	YES	YES	YES	YES	–
5. Identification of the QA Characteristics in a document					
Drawing	YES	–	–	–	–
Standards	YES	YES	YES	–	–
6. Control of “Important characteristics” and “QA Characteristics and Semi-QA Characteristics in QA Table (Quality design sheet)”.					
Description and Indication to documented standards	YES	YES	YES	YES	YES
Workers’ Education and Evaluation of Understanding level	YES	YES	YES	YES	–
7.-1) Ensuring and Maintaining Process Capability					
Prototype(VC Lot) ※(Only at Jatco request)	YES	YES	YES	YES	YES
Production Trial (Pre-PT、PT1、PT2 etc.)	YES	YES	YES	YES	YES
SOP / Safe Launch Period	YES	YES	YES	YES	YES
After Safe launch Period	YES	YES	YES	YES	YES
7-2) Using SPC for daily control	YES	YES	YES	–	–

YES : Applicable — : Not Applicable

S.R. - 8: Guide for Initial Product Control

1. Outline

The supplier shall implement activities described below in order to conduct smooth initial product control during prototype, production trials and volume production stage.

2. Scope

1) New-design parts
2) Parts with design changes or specification changes
3) Parts with process changes (corresponding the parts with “Guide for Change Control”)
4) New-ordered parts
5) Other parts specified by JATCO (reworked parts, countermeasure parts, the proposed use for concession, others)

<Related Guide/Form>

Guide for Change Control (S.R. -4)

3. Prototyping (Development Trials, VC-lot)

1) Inspection and Testing

The supplier shall conduct the necessary tests and inspections to prove that the part satisfies the drawing and other specifications(*1).

(*1) In case there are parts indicated as standard parts in the drawing and other specifications, the specifications specified in the corresponding technical standard (JDS, NDS, etc.) are also included.

・ All drawing characteristics inspection: n = 1 (including proof of materials)
・ Major characteristics inspection: n = 3 Describe in Initial Sample Quality Check Report (including All Drawing Characteristics inspection n = 1)
・ Major characteristics of Process Capability Study: n≧:30 (Only if requested by Jatco)

(Major characteristics are dimensions, run-out/deflection, hardness, etc. which are specifications with tolerances listed on the drawing. Performance characteristics (temperature, etc.) are included.
Durability test and reliability characteristic are not included.)

Other measurements, etc. may be added to the above if there are specific measurement requests from customers of JATCO.

2) Preparation and Submission of Inspection Report

The inspection report shall be attached at the time of delivery using the “Cover of Prototype Inspection Report” as the cover of measurement data and filling it with required items.
The form for measurement data shall be free. It shall be allowed that measured data are shown in the drawing.
As for the parts of n = 3 mentioned above, identification shall be provided so that

correspondence with the results of inspection and measurement correlation is possible. Questions, if any, shall be made to the prototyping department of JATCO.

<Related Guide/Form>

Cover of Prototype Inspection Report (Form-43)

4. Production Trials (PT1, PT2)

1) Inspection and Test

The supplier shall conduct the necessary tests and inspections to prove that the part satisfies the drawing and other specifications(*1).

(*1) In case there are parts indicated as standard parts in the drawing and other specifications, the specifications specified in the corresponding technical standard (JDS, NDS, etc.) are also included.

- All drawing characteristics inspection: n = 1 (including proof of materials)
- Major characteristics inspection: n = 5 Describe in Initial Sample Quality Check Report (including All Drawing Characteristics inspection n = 1)
- Major characteristics of Process Capability Study: n=30 or more
- Contamination and Destructive Inspection: An evaluation for N = 30 or more may be required.
- Hardness test (send the investigated cut samples)

Major characteristics are dimensions, run-out/deflection, hardness, etc. which are specifications with tolerances listed on the drawing. Performance characteristics (temperature, etc.) are included.
Durability test and reliability characteristic are not included.

2) Other measurements, etc. may be added to the above if there are specific measurement requests from JATCO.

3) Preparation and Submission of Inspection Report

Inspection reports shall be prepared using the “Initial Product Delivery Notice” the “Initial Product Quality Confirmation Report”, “All characteristic on drawing report” shall be attached at the time of delivery. Products identification shall be provided so that correspondence with the results of inspection and measurement correlation is possible.

If you receive instructions from JATCO, you can also send by electronic document file.

<Related Guide/Form>

Initial Product Delivery Notice (Form-13)

Initial Product Quality Confirmation Report (Form-14)

Process Capability Study Report (Form-15)

5. Initial Sample

1) Requirements

Parts manufactured in the condition of off process and off tooling (die, equipment, inspection tool, operator, tact of production, working method, etc.) at full production rate.

2) Inspection and Testing

The supplier shall conduct the necessary tests and inspections to prove that the part satisfies the drawing and other specifications(*1).

(*1) In case there are parts indicated as standard parts in the drawing and other specifications, the specifications specified in the corresponding technical standard (JDS, NDS, etc.) are also included.

- All drawing characteristics inspection: n = 1 (including proof of materials)
- Major characteristics inspection: n = 5 Describe in Initial Sample Quality Check Report (including All Drawing Characteristics inspection n = 1)
- Major characteristics of Process Capability Study: n=30 or more
- Contamination and Destructive Inspection: An evaluation for N = 30 or more may be required.
- Hardness test (send the investigated cut samples)

If the supplier does not have equipment for inspection and testing, the test equipment of an industrial experiment body may be used.

As a rule, samples used in destructive tests and similar tests shall be kept for six months after volume production and delivery. For the parts specified by JATCO, there may be a volume production trial within JATCO, following the initial sample approval and before the production part approval. As for the method of initial product control, consult with the responsible supplier quality assurance department of JATCO if necessary.

3) Preparation of Inspection Report

Inspection reports shall be prepared using the “Initial Product Delivery Notice”, the “Initial Product Quality Confirmation Report”, and the “Process Capability Study Report” and “All characteristic on drawing report” shall be attached at the time of delivery.

If you receive instructions from JATCO, you can also send by electronic document file.

In relation to Design change parts and Process change parts, the description of any changes should be clearly specified in “Initial Product Quality Confirmation Report” to be able to find any changes are included.

When there are any changes in component parts, supplier should add the following 2 points to “Initial product quality confirmation report”.

・Inspection result of component parts

In case of component parts are supplied part, inspection report can be substituted.

・Confirmation result of that changed component parts to be incorporated.

Products identification shall be provided so that correspondence with the results of inspection and measurement correlation is possible.

4) Submission

In principle, the supplier shall submit the initial sample (as a rule, 3 parts) and the inspection report to the plant quality assurance department of JATCO, and receive approval, at least two weeks prior to the start of volume production and initial delivery.

Please submit necessity document based on “Guide for Production Part Approval”

5) Identification

When submitting the initial sample, a format with clear identification of contents as the initial sample shall be prepared and displayed visible place on the packaging.

<Related Guide/Form>

Guide for Production Part Approval (*S.R.-5)*

Initial Product Delivery Notice (Form-13)

Initial Product Quality Confirmation Report (Form-14)

Process Capability Study Calculation Sheet (Form-15A, B)

6. Initial Product of mass-Production

1) Preparation and Submission of Inspection Report

The inspection report shall be prepared using the “Initial Product Delivery Notice” and the “Initial Product Quality Confirmation Report (n=5)” shall be attached at the time of delivery.

If you receive instructions from JATCO, you can also send by electronic document file.

In relation to Design change parts and Process change parts, the description of any changes should be clearly specified in “Initial Product Quality Confirmation Report” to be able to find any changes are included.

When there are any changes in component parts, supplier should add the following 2 points to “Initial product quality confirmation report”.

・Inspection result of component parts

In case of component parts are supplied part, inspection report can be substituted.

・Confirmation result of that changed component parts to be incorporated.

(If initial product condition of Volume-Production is same as initial sample production, supplier can use copy of “Initial Product Quality Confirmation report” at initial sample production timing.)

2) Identification

In principle, the first three shipments s delivered to each division of JATCO after the start of volume production shall be marked, either with an INITIAL stamp at least 50 mm across, or else a separate form (Form-62 : Reference), attached to the packaging in such a position as to be clearly identifiable. Also, Form-62: Reference shall be displayed in a place where is clearly visible of the first three shipments.

3) If JATCO site have multiple factory and when supplier already deliver product to other factory of JATCO same site, Copy of Notification of Design or Process change and Parts Submission Warrant shall be submitted with initial product delivery notice and Initial product quality confirmation report. Also, please contact the production quality assurance department of the delivery factory in advance.
For example, in the case JATCO-Mexico has site1 and site2.

List of factories

Company	JATCO	JMEX	JTL	JGZ	JSZ
Country/Area	Japan	Mexico	Thailand	China	China
Plant	Fuji Area A/1/2/3/4 Fujinomiya Kanbara Kakegawa Yagi JE (JATCO Engineering) Fuji Area 4/Kanbara	Site1 Site2	Thailand	Guangzhou	Suzhou

<Related Guide/Form>

Initial Product Delivery Notice (Form-13)
Initial Product Quality Confirmation Report (Form-14)
Initial Product (Form-62 : Reference)

S.R. - 9: Guide for Special Processes, Process Control

1. Outline

The following process shall be set as special processes based on quality characteristics.
In order to assure these processes, the procedures for process control including the items below shall be documented and controlled.

2 Definition of Special process, process control

The process where characteristics that cannot be measured directly are made; malfunction would appear after use and those characteristics cannot be inspected without cutting the parts. Process that includes characteristics not enable for 100% inspection.

1) Examples of Special Processes

Heat Treatment	Add temperature and change material characteristics	For metals Hardening, tempering Carburized quenching, Low-temperature - annealing Nitriding, nitro carburizing Carbonitriding Flame hardening/tempering	Normalizing, annealing Plasma hardening Induction hardening/tempering Press tempering Other processes
Welding (CQI-15) & Soldering (CQI-17)	Melted materials and bonded	For metals Melt welding, electric resistance welding, beam welding, brazing, soft soldering, etc.	
Plating (CQI-11) & Coating (CQI-12)	Cover with another materials or add external force.	For metals Plating (electroplating, chemical plating, others), shot peening, micro shot peening, etc. Coating process as paint, alumite etc.	
Plastic Working in which strength is important	Changes materials with external pressure.	Press, clinching	

Welding	Heat up Component until exceeds melting point, add pressure to combine at molecular level.	Ultrasonic welding, Welding vibration, High frequency welding
Casting	Dissolve the metal and cool it after injection into the mold.	Metal mold Casting、Sand mold Casting.
Other		Impregnating, bonding, depositing and moulding etc.

2) Subject Parts

Supplier shall specify the production part produced by above process.

3) Carrying Out Particular Process Control

For particular processes, the supplier shall have a certification system for workers and shall monitor and control the process parameters, in addition to the usual process control

Characteristics to be Controlled	Determine the characteristics for each part during the production preparation stage.
Inspections and Records	For Priority Parts, Critical safety parts, the inspection reports of characteristics shall be kept for ten years. For other parts, five years.
Parameter Records	For Priority Parts, Critical safety parts, the records of parameters which have a major influence on product quality shall be kept for ten years. For other parts, five years.
Education	Workers involved in particular process operation shall be certified. Workers who have been specially trained.

4) Examination and Certification by the Customer

If requested to authorize by a customer, JATCO will inform the subject plant or process to the supplier and the supplier shall receive the examination and certification.

5) Special processes audit

If customer required JATCO will perform audit according to CQI requirement.

S.R. - 10: Guide for Handling of Nonconforming Part

1. Outline

This guide prescribes the procedures for Handling of nonconforming parts.
The supplier shall document a procedure for "Handling of Nonconforming Part" containing points mentioned below in a case of a non-conforming or suspect product are found on delivery parts at JATCO, the supplier shall take responsibility and implement containment, investigate the situation and immediately contact the supplier quality assurance & management department of JATCO and take proper corrective action (including recurrence prevention).

2. Handling of Nonconformity

1) Information Route

Information concerning nonconformity shall be immediately reported to the plant quality assurance department and the responsible supplier quality assurance department of JATCO.
The supplier shall prepare the procedure which makes clear the reporting route from the person who discovered the nonconformity to the QA responsible person and to JATCO and means for cooperation between related departments shall also be clear.
The QA responsible person shall decide the importance of the nonconformity and the actions.

2) Prevention for Non-conformance Parts Outflow

Provisional measures, such as sorting out and recollection of products already delivered to JATCO, shall be taken to prevent the outflow of nonconforming parts.
Retrospective inspections shall be done for all processes with possible affectation from raw materials to assembled transmissions or vehicles, including warehouse. Results to be recorded.

3) Assuring Good Parts

For the purposes of JATCO's production continuation and taking action for the nonconformity, the supplier shall strive to supply OK parts by cooperation with the production control department and related departments.
However, for matters concerning product quality relating to disposition, etc. of warehoused parts, the supplier shall cooperate with the plant quality assurance department and the responsible supplier quality assurance department of JATCO.

4) Countermeasures

The supplier shall investigate causes of nonconformity and apply countermeasure quickly.

- Containment Actions must be performed within the first 24hrs after Notification.
- Permanent Actions must be performed within the first 10 working days after Notification.

or in the time limit directed from JATCO.

3. Recurrence Prevention

1) Individual Countermeasures

The supplier shall investigate causes of nonconformity occurrence and outflow (the part, process, and human (operators/managers) factors, etc.) and apply definitive/irreversible countermeasure.

2) Horizontal Development
Horizontal development shall be for similar parts and process, and global regional plants and take appropriate actions accordingly.

3) Measures to Prevent Recurrence for System
The supplier shall review the system such as procedures, engineering standards, organization, etc. and take countermeasures to prevent the occurrence of defects from the same cause.

4) Implementation of Evaluation
The QA responsible person shall evaluate the countermeasures and actions taken and the status of observance of the measures.

5) Utilize the Information for Preventive Action
The information concerning nonconforming parts shall be accumulated and utilized to prevent occurrences in advance.

6) Delivery for Countermeasure-Products
If requested by JATCO, the first delivery of parts with the countermeasures shall be followed the procedure as determined in the "Guide for Initial-Product Delivery."

Related Guide/Form>

Guide for Initial Product Control (S.R.-8)

4. Procedure for JATCO

1) Reporting Occurrence of Nonconformity
In the event of occurrence of nonconformity inside or outside the supplier, the situation, contents, disposition, etc. of the nonconformity shall be reported to the plant quality assurance department and the responsible supplier quality assurance department of JATCO, instructions shall be received. If there are multiple delivery destinations, report to all of them and receive their instructions.

2) Reporting Abnormal Occurrence of In-Process Nonconformity
When the rate of in-process defect items (i.e. contamination, blowhole defects, etc.) which cannot guarantee it 100%, is determined to be abnormal, the supplier shall report to JATCO's plant quality assurance department and the responsible supplier quality assurance department of JATCO and evaluate a possible affectation to JATCO's customer.

3) Reporting Recurrence-Prevention Countermeasures
Submit the Report on Defect Recurrence Prevention (8D), containing the cause, recurrence-prevention countermeasures, etc. based on the "Inspection Report" and "Market/Delivery Claim Countermeasures Request" issued by JATCO. Response shall be submitted before time deadline.

- Permanent Prevention Countermeasure must be reported within the first 10 working days after Notification or in the time limit directed from JATCO.

For recurrences and serious claims, JATCO may receive a report from the supplier in person, or may visit the supplier and verify the status of countermeasures.
Submit the "Process Audit Improvement Plan and Report" and "Process confirmation improvement plan and report" for nonconforming items and undertake assured follow up until

completion.
"Process confirmation improvement plan and report" shall contain all applicable items of process confirmation. Supplier shall make "Process confirmation improvement plan and report" using photo, etc. for all investigation items.

Regarding the case of the Report on Defect Recurrence Prevention Summary(8D-Report), monitoring of measures compliance status at the production shall be check two months later. Then fill in the results in the 8D-report and submit.

<Related Guide/Form>

Report on Defect Recurrence Prevention Summary) (Form-30)
Process Audit Improvement Plan and Report (Form-46A)
Process confirmation improvement plan and report (Form-46B)

S.R. – 11: Guide for Special adoption processing

1. Outline

If the supplier judges parts are usable from the viewpoint of quality fit and function, and they can request to use the parts which were found in the supplier that they do not comply to the requirements of JATCO or which were returned from JATCO, please follow this procedure.

2. Procedure for Proposed Use for Concession

The supplier shall submit the "Proposed Use for Concession" and "Process Audit Improvement Plan and Report" with the details of nonconformity, amount, reason for proposal (reason why product has been determined usable), cause of nonconformity, recurrence-prevention measures, etc. In the case of volume production or prototype, it shall be submitted to the responsible purchasing department of JATCO. In the case of development prototype, it shall be submitted to the prototype department of JATCO. When necessary, a sample shall also be submitted.

If the supplier produce parts before JATCO approval of the process, please submit "Notification process change" beforehand.

If the supplier cannot submit "Notification process change", the supplier shall submit "Proposed Use for Concession" to purchasing department of JATCO. " Proposed Use for Concession" shall be submitted original document. (JATCO does not receive electric file and Fax, etc.)

<Related Guide/Form>

Before VC trial（Design trial）;

Proposed Use for Concession (Supplier's Development Prototype) (Form-44)

After PT1 ～Mass production;

Proposed Use for Concession (For Mass Production) (Form-28)

3. Delivery of Proposed Parts

When delivering parts which have been approved by JATCO, attach a copy of the "Proposed Use for Concession" with JATCO approval and attach a form to the packaging that clearly identifies the product as a proposed part for concession. Records for parts under this condition shall be kept for further analysis.

Delivery date and identification method shall be coordinated with plant quality assurance department of JATCO when supplier delivers the proposed parts.

S.R. – 12: Guide for New Product Quality Procedure for Development Stage

1. Outline

This guide describes quality assurance activities for development stage and the documents that shall be submitted to JATCO.

2. Quality Assurance Activities for the Development Stage

1) Activities

The supplier which designs a part based on the JATCO's requirements shall assign a quality responsible person for new-product, organize a project team or the like and carry out the following activities.

2) At the time of the launch of a new unit, please follow the directions when JATCO asks for the joint activity based on the new material used, the new manufacturing method used, or the degree of change in the performance requirements of the parts, etc.
(JATCO will ask for the joint activity, and notify activity details, submission forms, submission due date at the supplier's meeting or in writing.).

Item	Contents	Concrete Examples
Confirmation of Specifications Required	-Make clear the market requirements based on market appraisal of current products and similar products.	
Confirmation of Drawing and other Specifications	-Check the contents of the drawings and specifications presented by JATCO Design team, and confirm that the dimensions and initial characteristics required for parts manufacturing are specified without any deficiencies / unclear points. -If there is a part specified as a standard part in the drawing / specification, check the corresponding technical standard (JDS, NDS, etc.) and check if there are any deficiencies / unclear points in the dimensions and initial characteristics. ・ If there are any deficiencies / unclear points, contact JATCO immediately to resolve them.	-Drawing -Technical Specifications of Product -Technical Standards (JDS, NDS etc.)
Establishing Objectives	-Establish design-quality objectives, study design measures to achieve the objectives -Make clear the factor or item being controlled at each phase and the objective for each stage	-Quality List 2 -Quality matrix
Verification of Process Capability	-Investigate the process capability for current production process and similar processes; verify that the characteristics designed are producible.	
Verification of	-Study how, and at what process, all specifications and	-Quality matrix

Quality Assurance Methods	production quality objectives will be assured. -Compare specifications, etc. with current products and similar products and make clear how to assure the difference.	-Manufacturing Method Matrix of part by part -QA Table(Quality design sheet), QA Table(Quality design sheet) (B) -Quality List 3 -Control plan -4M list
Pre-Study of Defect Expected	-Investigate what the possible causes of defects are and how they can be eliminated. -Make a check and improvement based on examples of past defects. -Control the progress of those items which need improvement by prioritize.	-Design FMEA, Process FMEA -P-FTA -Recurrence-Prevention Checklist -Nonconformity and Pending Item List

Plan of devices (including test devices), gauges, moulds and facility for new products	-New or modified devices (including test devices), gauges, moulds and facility shall be appropriate and delivered as scheduled.	-Quality Assurance Plan for New Product -Gauge R&R
Test Verification	-Confirm that the part satisfies specification required, including production tolerances (upper/lower limits).	-Reliability Test Report
Improvement of Difficult Operation	-Review part-design and equipment-design for ease of operation at design stage.	
Request for Modification of Drawings and Specifications	-Through synthetic review, test verification, improvement of difficult operation and the like, necessity of request to JATCO design department on modification request of drawings and specifications shall be reviewed and requested to JATCO.	-Drawings -Engineering Specifications of the product -Design and Engineering Report, Supplier/CUS -4M List -List of Changing Point (Submission is mandated whenever there are any changes.)
Control of Pending Items	-All the pending items shall receive progress control based on the list of defects and pending items. Detailed information shall be documented in parts chart. Transfer to next process shall be made after every item in the list of defects and pending items is closed.	-List of Defects and Pending Items -Parts Chart
Progress Confirmation of	-Progress of the production preparation shall be confirmed and the tasks and problems shall be	-Quality Assurance Plan for New Product

Production Preparation	followed up.	
Synthetic Review (In-house Design Review at the supplier)	-It shall be confirmed that plans needed to achieve design target have been made. -Progress of the plan shall be confirmed at each stage in order to achieve the product and process target. -Design review and improvement shall be implemented on functions, performance and maintainability taking cost and delivery into consideration. (Confirmation Items) -Development items (new technologies, materials and manufacturing method, etc.) have been made clear and the best plan has been established to comply with the specifications proposed by JATCO and to achieve the development items. -Design parameters (engineering definition) to achieve JATCO's design targets (performance, weight, cost and reliability, etc.) have been set. -Standard secondary configuration parts, materials and processes are being used where applicable. -The results of design review are satisfactory. -FMEA activities have been completed. -Countermeasures for every specified pending item are satisfactory. In order that JATCO can attend the design review, the supplier shall notify the date and details of the design review at least two weeks before the review.	-Design Review Record
Declaration of Development Completion	-Before the 1st or 2nd production trials, the new-product QA responsible person confirms that design-stage activities are completed, design-quality objectives and production control objectives have all been met, and that all the concerns have been closed and then the approval has been obtained from the responsible design department of JATCO, the new-product QA responsible person declares that development is completed.	

For Activities for production preparation stage, refer to "Guide for New Product Quality Procedure for Production Preparation Stage".

3) Support by Management

Management (i.e. President, plant manager, etc.) of the supplier shall provide resources needed to meet effectively with every specified pending item at every stage of the project in order to fulfil with project plan.

"Minutes of the review meeting attended by Management" shall be recorded, maintain and made available according to the request by JATCO.

Contents of the "Minutes of the review meeting attended by Management" shall be as follows:

(3) Date and attendees of the meeting
(4) Project name discussed
(5) Details of the problems raised on the project
(6) Directions of the management on the raised problems
(7) Follow-up to the action items in the previous minutes

2. Documents to be submitted to JATCO

The submitted documents are shown in the "Submitted Documents table" on the following pages.
Forms that are "reference" in the "Document Format" column of the "Documents to be submitted" can be submitted in your company form.

The supplier shall submit the following documents for the parts in the proposed drawings and specified by the responsible design department of JATCO.
If JATCO indicates about documents, date or where to submit, the supplier shall follow the indication. As for the parts in the parts drawings, the supplier shall follow the indication of JATCO about documents, date and where to submit. For the documents of "Prescribed Format", the attached format shall be used. As for the documents of "Reference Format", the format is left to the supplier's choice, but the items listed in the attached format shall be cover/included. If there is any question about how to prepare and when and where to submit the documents, the supplier shall make an inquiry to supplier quality assurance department.

No	Documents to be submitted	Category of Subject Parts and Submission		Time of Submission			Submit to	Document Format
		Parts Level	Submission Level	Before DR UD Lot	Before DR UC Lot	Before Production DR		
1	Quality Assurance Plan for New Product	Group 1 Group 2 Group 3	S*	- Prototyping	-	Yes (Timing of production DR)	2	3 (Reference Format)
2	Design FMEA	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	4 (Reference Format) (AIAG or VD A or AIAG&VDA acceptable)
3	Supplier's Design Record	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	Supplier's Document
4	P-FTA	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	34 (Reference Format)
5	Quality List 2	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	35 (Reference Format)
6	Quality Matrix	Group 1 Group 2 Group 3	S*	-	Yes	Yes	3	36 (Reference Format)
7	Manufacturing Method Matrix	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	37 (Reference Format)
8	QA Table(Quality design sheet)	Group 1 Group 2 Group 3	S*	-	Yes	Yes	3	38 (Specified Format)
9	Report of the Results of Review on Reliability Test Plan	Group 1 Group 2 Group 3	S* R	Yes	Yes	Yes	3	5 (Reference Format)
10	Parts chart	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	11, 12 (Specified Format)
11	Checklist for Recurrence Prevention	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	Supplier's Document

12	List of Defects and Pending Items	Group 1 Group 2 Group 3	S*	-	Yes	Yes	4	39 (Specified Format)
13	Design and Engineering Report	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	4	42 (Specified Format)
14	Supplier/CUS	Group 1 Group 2 Group 3	S*	-	Yes	Yes	4	48 (Specified Format)
15	Process FMEA	Group 1 Group 2 Group 3	S*	-	Yes	Yes	2	8 (Reference Format) (AIAG or VDA or AIAG&VDA acceptable)
16	Quality List 3	Group 1 Group 2 Group 3	S*	-	Yes	Yes	2	40 (Specified Format)
17	QA Table(Quality design sheet) B	Group 1 Group 2 Group 3	S*	-	Yes	Yes	2	41(Specified Format)
18	Engineering Specifications of the Supplier	Group 1 Group 2 Group 3	R	-	-	Yes	3	Supplier's Document
19	Record of Design Review	Group 1 Group 2 Group 3	R	-	-	Yes	3	Supplier's Document
20	Minutes of the Review Meeting of Senior Managements	Group 1 Group 2 Group 3	R	-	-	Yes	3	Supplier's Document
21	Criteria & Process Risk Evaluation Sheet	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	2	56 (Specified Format)
22	Production Method Parameter QFD List	Group 1 Group 2 Group 3	S*	-	Yes	Yes	2	57 (Specified Format)
23	Production Know-how Matrix	Group 1 Group 2 Group 3	S*	-	Yes	Yes	2	58 (Specified Format)
24	New Engineering &New Manufacturing Method List	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	2	59 (Specified Format)

25	Reliability Brock Diagram	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	3	Supplier's Document
26	4M list	Group 1 Group 2 Group 3	S＊	○	○	○	2	61 (Specified Format)
27	List of Changing Point	Group 1 Group 2 Group 3	S＊	○	○	○	3	63 (Specified Format)

Parts Level

Group 1: Priority Parts, Critical safety parts, QFD activity implementation parts special parts (regulation parts, OBD characteristic parts and specified parts*)

Group 2: General parts

Group 3: Standard parts (bolt, nut, etc.), raw materials (forged parts, cast parts, etc.)

*: Parts specified by JATCO such as parts using new mechanism, new process or new materials.

Submission Level

S (Submission): Shall be submitted at the timing marked as "Yes"

R (Retention): Shall be kept at the supplier. Shall be submitted at the timing marked as "Yes" if requested.

S*: Shall be submitted at the timing marked as "Yes" if requested or applicable parts exist.

R*: Shall be prepared and kept at the supplier if requested or applicable parts exist. Shall be submitted at the timing marked as "Yes" if requested.

Document need to be submitted to the following departments

1: Plant quality assurance department

2: Responsible supplier quality assurance department

3: Responsible Design Division

4: Responsible Purchasing Division

S.R. – 13: Guide for Production Preparation Stage

1. Outline

This guide describes the quality assurance activities of production preparation stage for the new parts of new project or existing unit and documents that shall be submitted to JATCO.

2. Activities for Production Preparation

1) Activities for ensuring quality at the production preparation stage shall take the following items into consideration.

Item	Contents	Example
Confirmation of Specifications Required	-Make clear the market requirements based on market appraisal of current parts and similar parts.	-Market appraisal -Statistical analysis of market claims
Confirmation of Drawing and other Specifications	-Check the contents of the drawings and specifications presented by JATCO Design team, and confirm that the dimensions and initial characteristics required for parts manufacturing are specified without any deficiencies / unclear points. -If there is a part specified as a standard part in the drawing / specification, check the corresponding technical standard (JDS, NDS, etc.) and check if there are any deficiencies / unclear points in the dimensions and initial characteristics. ・ If there are any deficiencies / unclear points, contact JATCO immediately to resolve them.	-Drawing -Technical Specifications of Product -Technical Standards (JDS, NDS etc.)
Establishing Objectives	-Establish manufacturing quality objectives. -Make clear the factor or item being controlled at each phase and the objective for each stage.	-Market claims -Delivery nonconformity -In-process nonconformity -Quality Assurance Plan for New Product
Study of Quality Assurance Methods	-Study how, and at what stage, all requirements and production quality objectives will be ensured. -Compare manufacturing methods, etc., between current parts and similar parts. Make clear the methods to ensure the quality assurance at the different points.	-Quality List 3 -QA Table(Quality design sheet) B -Manufacturing Method Matrix -Quality Matrix -Control Plan -4M List

Pre-Study of defects Expected		-Investigate what the possible causes of defects are and how they can be eliminated. -Make a confirmation based on examples of past defects. -Control the progress of those items which need improvement by prioritize	-Process FMEA -Recurrence Prevention Checklist -Contamination Task Sheet
Preparation of Standards and Procedures		-Prepare and maintain the standards and procedures in order to obtain the high quality during the volume-production stage.	-Control Plan -Standard Operation Manual - Master sample -Inspection standard -Equipment maintenance check sheet -Quality check sheet
Education and Training of Workers		-Make plans for education and training for workers and carry them out.	-Standard Operation Manual -Education, training -Evaluation of operator
Improvement of Difficult Operations		Identify difficult operation during production preparation and make improvements.	
Preparation of Production Equipment, Tooling		-The development of mould shall be completed at VC lot. -Development of machining and assembly equipment should be completed before the 1st production trial. -Make improvements based on examples of past equipment troubles. -Evaluate the process capability.	-Schedule for set up -Process Preparation Plan & Report -MP design sheet -Process Capability Review
Design prototype; VC-lot Production trial (PT1 and PT2)		-The supplier shall conduct prototyping which complies with product specifications and required schedule of JATCO. Set the volume so that process capability can be grasped.	-Quality Assurance Plan for New Product
Evaluation of Prototype	Dimension Data and Initial Characteristics	-Verify that the dimensional data and initial characteristics specified in the drawings, technical standards (JDS, NDS, etc.) and inspection standards satisfy the criteria.	-Initial Product Quality Confirmation Report
	Study of Process Capability ※VC＝Only at request	-Study the process capability and confirm that the characteristics meet objectives. -Study shall be done using the parts with final specifications, and the parts produced by the volume production process.	-Process Capability Study Report -Parts Karte -QA Table(Quality design sheet)

	Reliability Test ※VC＝Only at request	-Verify that the part definitely meets reliability targets using the parts with variation (upper/lower limits).	-Reliability Test Plan & Report
	Packaging Evaluation ※VC＝Only at request	-Confirm that packaging specifications meet the requirements concerning transportation/handling, soil prevention, delivery to line side and marking. -Confirm the appropriateness of the packaging comparing with the application for assembled form for delivery.	-Application for assembled form for delivery
Volume-Production Trial Run@Rate		-Conduct a trial in the volume conditions (die, tooling, equipment, inspection equipment, operators, production cycle, etc.) at the production site (more than 300 parts) and evaluate the process capability, the appropriateness of standard operation, parts quality in the above conditions. -Timing: Before volume production approval -If used dies (moulds) or production processes are different or plural production shift exist, trial shall be conducted for each one. -Supplier shall execute Run @ Rate based on “Guide for Run @ Rate”, when JATCO requires.	-Guide for Run @ Rate
Progress Confirmation of Production Preparation		-Progress of production preparation shall be confirmed and the follow-up of tasks and problems shall be conducted.	-Quality Control Indices for Production Preparation -Quality Assurance Plan for New Product

Synthetic Review (Supplier's Process Design Review) or Purchased Parts DR with JATCO	-Progress of the plan to achieve the target of product and process shall be confirmed. (Confirmation Items) -Extraction of design subject for Production DR -Evaluate of production subject based on parts design. -Confirm the appropriateness of the verification method, correlation verification. -Confirm the appropriateness of the process design and extraction of subject. -Confirm the appropriateness of the process parameter and extraction of subject. -Evaluate the necessity of technical support for production method. -Evaluate the finish timing of process preparation. -Complete the process FMEA and confirmation of each item. -Evaluate of significant failures recurrence prevention and horizontal development(Horizontally deploy measures to similar product) -Process design review shall be done with the responsible supplier quality assurance department. -The supplier shall notify the date and subjects of the internal review at least two weeks before the date of the review to JATCO.	-Record of Process Design Review
Declaration of Completion Production Preparation	-The new-product QA responsible person confirms that the production preparation activities are completed, and that production quality objectives and the quality control indices for PP have all been met. This person then declares that production preparation is completed.	-Quality Control Indices for Production Preparation -Quality Assurance Plan for New Product

2) Support by Management

Management (i.e. President and plant manager) of the supplier shall allocate resources needed to meet effectively with all the specified pending items in order to achieve the project plan and at every stage of the project plan.

"Minutes of the review meeting by Management" shall be presented available if requested by JATCO.

Items to be included in the "Minutes of the review meeting by Management" shall be as follows:

- Date and attendants of the meeting
- Details of the problem raised with the project
- Follow-up of the actions in the previous minutes

- Name of the project discussed
- Managements' instructions for the raised problem

3. Ensuring Process Capability

1) The process capability(calculated by: n = 30min)shall be achieved the targets on the chart below:

Category of control		Achievement target		Control Method
		PpK	Cpk	
Characteristics of Important characteristics		1.67or higher	1.67 or higher	Control Chart, etc.
Characteristics in QA Table(Quality design sheet) *4	Critical safety characteristics , Requirement characteristics from customer (S-Characteristics)	1.67 or higher	1.67 or higher	Control Chart, etc.
	Other than above items (*)	1.33 or higher	1.33 or higher	Control Chart, etc.
Semi-QA Characteristics/ General Characteristics		1.33 or higher	1.33 or higher	Check sheet, etc.

The target of process capability index may be changed to "1.67 or higher" about * item about JATCO request items.

If process capability do not achieved target, supplier shall take improvement in order to achieve target before PSW approval.

Ppk: Process capability index calculated from a total of 30 continues samples or more.

Cpk: Process capability index calculated from 100 or more samples taken from 25 or more groups including deviations between groups.

(Groups : Sampling parts from one shift (same lot))

*1: If the Cpk and Ppk do not achieve the targets, 100% assurance using a verified inspection system (100% inspection, etc.) shall be done to prevent outflow of nonconforming products

*2: The target of process capability index may be changed as request of JATCO's customers.

*3: Coordinate with the responsible supplier quality assurance department of JATCO when it is necessary to determine the number of products for prototype and destructive tests.

*4 See "QA table(Quality design sheet):Form38"from JATCO. There is QA table Characteristics and Semi-QA Characteristics.
If you have no "QA table (Quality design sheet)", please confirm its presence by asking JATCO Supplier quality assurance department.

2) The supplier shall study the process capability for all processes and make an improvement to the process when process capability target is not achieved.

3) The supplier shall confirm process capability in volume production periodically. (every 3 months as a rule)

4. Milestone of production preparation stage

**Other type of Milestones events may exist and these will be notified by JATCO.

Milestone	Definition	Process condition	Production parts by sub tier supplier		
			Mould and Die	Equipment	Process (Operator, etc.)
VC-Lot	Production trial 100% Off-Tool for dies	Off-Tool for dies ※	100% Off-Tool	-	-
PT1	Production Trial 1 (Production preparation)	100% Off-Tool & Off-Process (Equivalent for volume production)	Same left	←	←
PT2	Production Trial 2 (Production preparation)	100% Off-Tool & Off-Process (PPAP/PSW have been ready.)	Same left	←	←
Volume Production (SOP)	Start of production	PSW approval has been done.	PSW approval has been done with sub tier supplier.	←	←

Off-Tool for dies ※ :Some projects may require off tools

Depending on the project, JATCO may require PT1 equivalent as “Pre-PT”.

Off tool : Trial using same mass production equipment, die, Jig

Off Process: Trial using not only same mass production equipment, die, Jig, but also layout operator cyclic times etc. are

Same condition with Mass production.

Note;

As a general rule, PT1 ~ SOP ~ SLP

Prohibit design / process change.

If you need to these change,

Please consult with JATCO supplier quality assurance department.

5. Documents Submission to JATCO

The supplier shall submit the documents below to JATCO.

The submitted documents are shown in the “Submitted Documents table”

On the following pages.

Forms that are “reference” in the “Document Format” column of the “Documents to be submitted” can be submitted in your company form.

If JATCO provides instructions about the documents, “submission timing” and “submission to”, the supplier shall follow the instructions.

Also, JATCO may request supplier to disclose and submit any documents relevant to sub Tier supplier as necessary.

However, in case of event where the documents are not available to submit to JATCO, such as confidential items, consult and decide with JATCO for any alternative means to get confirmed.

When preparing the reports listed below, refer to the attached chart and the “Guide for Production Part Approval”.

For those documents of “Specified Format” this format shall be used. For those documents of “Reference Format”, the supplier can use any form; however it shall include the items listed in the formats.

If there is any question about how to prepare, when and where to submit the documents the supplier shall make an inquiry to supplier quality assurance department.

	Documents to be submitted	Submission Category		Submission Timing							Submit to:	Document Format
		Parts Level	Submi-ssion Level	UC Lot	Design Release	Before VC Lot	Before PT1	Before PT2	PSW	Before SOP		
1	Quality Assurance Plan for New Product	Group 1 Group 2 Group 3	S	-	Yes	Yes	Yes	Yes	Yes	Yes	2	3 (Reference format)
2	Reliability Test Plan and Report	Group 1 Group 2	S	-	Yes	Only at request	Yes	Yes	Yes	-	2	5 (Prescribed format)
		Group 3	R									
3	Control Plan	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	-	2	6, 7 (Reference format)
4	Process FMEA (AIAG or VDA or AIAG&VDA)	Group 1	S	-	Yes	Yes	At Time of Change				2	8 (Reference format)
		Group 2 Group 3	S	-								
5	Quality Control Indices for Production Preparation	Group 1 Group 2 Group 3	R	-	-	Yes	Yes	Yes	Yes	-	2	9, 10 (Reference format)
6	Parts chart Parts development history	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	-	2	11, 12 (Reference format)
7	Initial Product Delivery Notice	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	Yes	1 (Note1)	13 (Prescribed format)
8	Initial Product Quality Confirmation Report	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	Yes	1 (Note1)	14 (Reference format)
9	Process-Capability Report	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	-	2	15 (Reference format)

10	Inspection of All Characteristics in the Drawing	Group 1 Group 2 Group 3	S	-	-	Only at request	Yes	Yes	Yes	Yes	1 (Note1)	Supplier's format)
11	Approval Report for Limit Sample	Group 1 Group 2 Group 3	S	-			Yes					17 (Reference format)
12	Plan of Special Activity During Launch period	Group 1 Group 2 Group 3	S R	-	-	-	-	-	Yes	-	2	33 (Reference format)
13	Notification and Description of Design/Process Change	Group 1 Group 2 Group 3	S*	-	-	-	-	-		Yes (At Time of Occurrence)	2	21, 22 (Prescribed format)
14	Notification of Delivery-Parts Lot Control	Group 1 Group 2 Group 3	S*	-	-	-	Yes	-	-	-	2	23 (Reference format)
15	Inspection Standard	Group 1 Group 2 Group 3	S	-	-	-	Yes	At Time of Change			2	24 - 26 (Reference format)
16	Evaluation Sheet for Understanding Characteristics in QA Table(Quality design sheet)	Group 1 Group 2 Group 3	S*	-	-	-	-	-	Yes	-	2	27 (Prescribed format)
17	Initial Sample	Group 1 Group 2 Group 3	S	-	-	-	-	-	Yes	-	1 (Note1)	-
18	Process Preparation Plan and Report	Group 1 Group 2 Group 3	S	-	-	Yes	Yes	Yes	Yes	-	2	31 (Reference format)
19	Contamination Task Sheet (Map)	Group 1 Group 2 Group 3	S*	-	Yes	Yes	Yes	Yes	Yes	Yes	2	32 (Prescribed format)

20	Report on Defect Prevention	Group 1 Group 2 Group 3	S*	-	-	Yes (At Time of Occurrence)						2	30 (Prescribed format)
21	Manufacturing Method Matrix	Group 1 Group 2 Group 3	R*	-	Yes	Yes	At Time of Change					2	37 (Prescribed format)
22	QA Table(Quality design sheet)	Group 1 Group 2 Group 3	S*	-	Yes	Yes	Yes	Yes	Yes	Yes		2	38 (Prescribed format)
23	Quality Matrix	Group 1 Group 2 Group 3	R*	-	Yes	Yes	At Time of Change					2	36 (Prescribed format)
24	Quality List 3	Group 1 Group 2 Group 3	R*	-	Yes	Yes	Yes	At Time of Change				2	40 (Prescribed format)
25	QA Table(Quality design sheet) B	Group 1 Group 2 Group 3	R*	-	Yes	Yes	Yes	At Time of Change				2	41 (Prescribed format)
26	Design Review Record	Group 1 Group 2 Group 3	R	-	Yes	Yes	Yes	-	-	-		2	Supplier's Document
27	Standard Operation Manual	Group 1 Group 2 Group 3	R	-	-	-	Yes	-	-	Yes		2	45 (Reference format)
28	Report of production preparation condition	Group 1 Group 2 Group 3	R	-	-	-	Yes	Yes	-	-		2	Supplier's Document
29	Minutes of Review Meeting by Senior Managements	Group 1 Group 2 Group 3	R	-	Yes	Yes	Yes	Yes	-	-		2	Supplier's Document
30	Supply Chain Registration Control Sheet	Group 1 Group 2 Group 3	S	-		Yes	Yes	At time of Change				2	47 (Prescribed format)
31	Supplier/CUS	Group 1 Group 2 Group 3	S*	Used at when making a sudden request for a design change subsequent to ordinary orders, etc.								4	48 (Prescribed format)

32	Nonconformity and Pending Item List	Group 1 Group 2 Group 3	S*	-	Yes	Yes	Yes	Yes	-	-	4	39 (Prescribed format)
33	Process Audit Improvement Plan and Report	Group 1 Group 2 Group 3	S*	-	-	Yes	Yes	Yes	Yes	Yes	2	46 (Prescribed format)
34	Gage R&R Report	Group 1 Group 2 Group 3	R*	-			Yes	Yes	Yes	Yes	2	18,19 (Reference format)
35	PSW/PPAP	Group 1 Group 2 Group 3	S	-	-	-	Yes	Yes	Yes	-	2	2 (Prescribed format)
36	Criteria & Process Risk Evaluation Sheet	Group 1 Group 2 Group 3	R*	- -	Yes	Yes	Yes	Yes	Yes	Yes	2	56 (Prescribed format)
37	Production Method Parameter QFD List	Group 1 Group 2 Group 3	R*	-	Yes	Yes	Yes	Yes	Yes	Yes	2	57 (Prescribed format)
38	Production Know-how Matrix	Group 1 Group 2 Group 3	R*	-	Yes	Yes	Yes	Yes	Yes			58 (Prescribed format)
39	New Engineering & New Manufacturing Method List	Group 1 Group 2 Group 3	S*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	2	59 (Prescribed format)
40	Run@Rate	Group 1 Group 2 Group 3	S S*	-					Yes		2	50 (Prescribed format)
41	Status received MDSs (IMDS)	Group 1 Group 2 Group3	S	-					Yes		2	It is based on an IMDS input guide. (Prescribed format)

42	Copy of IATF certifications	Group 1 Group 2 Group3	S	-					Yes			
43	4M List	Group 1 Group 2 Group 3	S	Yes	Yes	Yes	Yes	Any time when changing			2	61 (Specified Format)
44	Lot Control Card	Group 1 Group 2 Group 3	S*	-	-	-	Yes	Yes	Yes	Yes	1	S.R-6 Reference

Parts Level

Group 1: Priority Parts, Critical safety parts, QFD activity implementation parts special parts (regulation parts, OBD characteristic parts, *specified parts)

Group 2: General parts

Group 3: Standard parts (bolt, nut, etc.), raw materials (forged parts, cast parts, etc.)

*specified parts: Parts using new mechanisms, new manufacturing methods, or new materials, or parts specified by JATCO.

Submission Level

S (Submission): Submit to JATCO at the timing marked as “Yes”.

R (Retention): Keep at the supplier. Submit to JATCO at the timing marked as “Yes” upon request.

S*: If designated or applicable part exists, submit to JATCO at the timing marked as “Yes”.

R*: If designated or applicable part exists, prepare and keep at the supplier. Submit upon request from JATCO at the timing marked as “Yes” upon request.

Submission Timing

Yes: Before each event starts.

At Time of Change: Even if JATCO does not request, the supplier shall submit at the time of change without delay.

PSW approval timing for new product is related to supplier’s SOP. The supplier shall submit PSW with enough lead-time in order to receive JATCO approval before supplier’s SOP.

Document need to be submitted to the following departments

1: Plant Quality Assurance Department
2: The responsible supplier quality assurance department
3. The responsible design department
4. The responsible purchasing department

(Note 1)

Documents for the parts designated by JATCO shall be submitted to requiring department of JATCO.

6. Process FMEA for prevention of Critical/Significant failures occurrence

1) Outline

Prevent occurrence of Critical/Significant defects by implementing a process FMEA.

2) Application

JATCO Supplier Quality Assurance Department requests to execute process FMEA to the supplier.

The supplier will execute PFMEA by ranking each potential failure mode using AIAG Reference Manual - FMEA 4th ed. (or latest version), the responsible supplier quality assurance department will evaluate the correct ranking used.

Full requirements AIAG – FMEA (Latest Version) applies to parts delivery to JATCO Mexico.

3) Purpose

FMEA

Priority of countermeasure is shown by following ranking table (Severity, Occurrence and Detection) in order to prevent Critical/Significant failures occurrence.

4) Using method of ranking table

The ranking table is as follows. The number in the ranking table shows priority of countermeasure (Detection)."C" shows "Corrective Action Required" and "N" shows "No Corrective Action Required". This table shows standard value for "Detection" used by "Severity" and "Occurrence". In case the detection value of process FMEA is less than value of this table, it is possible to judge the necessity of countermeasure.

Severity										
	10	N	C	C	C	C	C	C	C	C	C
	9	N	C	C	C	C	C	C	C	C	C
	8	N	3	2	2	2	1	1	C	C	C
	7	N	4	3	2	2	2	1	1	C	C
	6	N	5	4	3	2	2	2	1	1	C
	5	N	6	5	3	3	3	2	2	1	C
	4	N	7	6	4	3	3	2	2	2	2

	3	N	7	6	5	4	4	3	2	2	2
	2	N	7	7	6	5	4	4	3	3	2
	1	N	N	N	N	N	N	N	N	N	N
S/O		1	2	3	4	5	6	7	8	9	10
		Occurrence									

C ： Corrective Action Required

N ： No Corrective Action Required（Judgement for necessity of countermeasure is done by supplier.）

1～8： If detection value is more than above table, the supplier shall take countermeasure.
If detection value is less than above table, the supplier does not need take countermeasure.
（Judgement for necessity of countermeasure is done by supplier.）

5) Use of ranking tables.

Ranking tables are based in AIAG Reference Manual - FMEA 4th ed. (or latest version) or VDA or AIAG&VDA. Always confirm the use of latest version.

- Severity

Effect	Criteria (Customer Effect)	Score	Effect	Criteria (Production-side of Effect)
Failure to Meet Safety and/or Regulatory Requirements	-Potential failure mode affects safe vehicle operation without warning -Involving noncompliance with government regulation without warning Example : Vehicle fire without warning	10	Failure to Meet Safety and /or Regulatory Requirements	May endanger operator (machine or assembly) without warning
	-Potential failure mode affects vehicle operation with warning -Involving noncompliance with government regulation with warning Example : Vehicle fire with warning	9		May endanger operator (machine or assembly) with warning

Loss or Degradation of Primary Function	Loss of primary function(vehicle inoperable, does not affect safe vehicle operation) Example : Incapability of driving	8	Major Disruption	-100% of product may have to be scrapped. -Line shutdown or stop shipping
	Degradation of primary function (Vehicle operable, but at reduced level of performance) Example: Invariable of speed	7	Significant Disruption	-A portion of production run may have to be scrapped. -Deviation from primary process (including decreased line speed or added manpower)
Loss or Degradation of Secondary Function	Loss of secondary function (vehicle operable, but comfort/convenience functions inoperable) Example : Incapable of Manual mode	6	Moderate Disruption	100% of production run may have to be reworked off line and accepted
	Degradation of secondary function (vehicle operable, but comfort/convenience functions at reduced level of performance) Example : Major Shift shock, Select time lag	5		A portion of the production run may have to be reworked off line and accepted
Annoyance	Appearance or Audible Noise, vehicle operable, item does not conform and noticed by most customers (>75%) (Vehicle is operable) Example : Gear Noise, oil leak	4	Moderate Disruption	100% of production run may have to be reworked in field before it is processed
	Appearance of Audible Noise, vehicle operable, item does not conform and noticed by many customers (50%)(Vehicle is operable) Example : Gear Noise, oil leak	3		A portion of the production run may have to be reworked in field before it is processed
	･Appearance or Audible noise, vehicle operable, item does not conform and noticed by discriminating customers (<25%) (Vehicle is operable) Example : Gear Noise, oil leak	2	Minor Disruption	Slight inconvenience to process, operation, or operator
No Effect	No discernible effect	1	No effect	No discernible effect

※If the both parties of production/customer will affect, impact of more higher party shall be applied.

※Customer End-user (End-user)
Direct Customer (Car Maker or Product Purchaser)
Supply Chain (Later-process within organization and supplier)
Legal Regulations (Regulations on safety and environment)

- Occurrence

Rating	Description	The number of occurrence of the 1000 parts
10	Very High: Failure is almost inevitable.	More then 100
9	High: Failures occur almost as often as not.	50
8	High: Repeated failures.	20
7	High: Failures occur often.	10
6	Moderately High: Frequent failures.	2
5	Moderate: Occasional failures.	0.5
4	Moderately Low: Infrequent failures.	0.1
3	Low: Relatively few failures.	0.01
2	Low: Failures are few and far between.	Less than 0.001
1	Remote: Failure is unlikely.	Failure can be prevented by system.

-Detection

Rating	Likelihood of Detection	Opportunity for Detection	Criteria: Likelihood of detection by process control
10	Almost impossible	No detection opportunity	No current process control; Cannot detect or is not analysed
9	Very Remote	Not likely to detect at any stage	Failure Mode and/or Error (Cause) is not easily detectable. Example: Random Audit
8	Remote	Problem Detection Post Processing	Failure Mode detection post-processing by operator through visual/tactile/audible means.
7	Very Low	Problem Detection at Source	・Failure Mode detection in field by operator through visual/tactile/audible means Or ・Failure Mode detection post-processing through use of attribute gauging (use of variable gauging Example : gauging go/no-go, manual torque check and clicker wrench

6	Low	Problem Detection Post Processing	・Failure Mode detection post-processing by operator through use of attribute gauging Or ・Failure Mode detection in field by operator through use of attribute gauging Example : gauging go/no-go, manual torque check and clicker wrench
5	Moderate	Problem Detection at Source	・Failure mode or error (cause) detection in field by operator through use of attribute gauging Or ・Failure Mode detection by automated controls in field that will detect discrepant part and notify operator (Example: Failure Mode or error (cause) detection by light, buzzer, etc.). Gauging performed on setup and first-piece check (for set-up causes only)
4	Moderately High	Problem Detection Post Processing	・Failure Mode detection post processing by automated controls (detect discrepant parts and lock parts to prevent further processing)
3	High	Problem Detection at Source	Failure Mode detection in field by automated controls (detect discrepant parts and automatically lock parts in field to prevent further processing)
2	Very High	Error Detection and /or Prevention	Error (Cause) detection in field by automated controls (detect error and prevent discrepant parts from being produced)
1	Almost Certain	Detection not applicable: Error Prevention	Error (Cause) prevention as a result of fixture design, machine design or parts design Discrepant parts cannot be produced because item has been error-proofed by process/product design.

* Ranking tables are based in AIAG Reference Manual - FMEA 4th ed. (or latest version) or VDA or AIAG&VDA.. Always confirm the use of latest version.

Reference : ranking tables. (quote from AIAG FMEA ranking tables)

Ranking tables are based in AIAG Reference Manual - FMEA 4th ed. (or latest version)

or VDA or AIAG&VDA. Always confirm the use of latest version.

Severity

Effect	Criteria: Severity of Effect on Product (Customer Effect)	Rank	Effect	Criteria: Severity of Effect on Process (Manufacturing/Assembly Effect)
Failure to Meet Safety and/or Regulatory Requirements	Potential failure mode affects safe vehicle operation and/or involves noncompliance with government regulation without warning	10	**Failure to Meet Safety and/or Regulatory Requirements**	May endanger operator (machine or assembly) without warning
	Potential filure mode affects vehicle operation and/or involves noncompliance with government regulation with warning	9		May endanger operator (machine or assembly) with warning
Loss or Degradation of Primary Function	Loss of primary function (vehicle inoperable, does not affect safe vehicle operation)	8	**Major Disruption**	100% of product may have to be scrapped. Line shutdown or stop ship
	Degradation of primary function (vehicle operable, but at reduced level of performance)	7	**Significant Disruption**	A portion of the production run may have to be scrapped. Deviation from primary process including decreased line speed or added manpower.
Loss or Degradation of Secondary Function	Loss of secondary function (vehicle operable, but comfort/convenience functions inoperable)	6	**Moderate Disruption**	100% of production run may have to be reworked off line and accepted
	Degradation of secondary function (vehicle operable, but comfort/convenience funtions at reduced level of performance)	5		A portion of the production run may have to be reworked off line and accepted.
Annoyance	Appearance or Audible Noise, vehicle operable, item does not conform and noticed by most customers (>75%)	4	**Moderate Disruption**	100% of production run may have to be reworked in station before it is processed
	Appearance or Audible Noise, vehicle operable, item does not conform and noticed by many customers (50%)	3		A portion of the production run may have to be reworked in station before it is processed
	Appearance or Audible noise, vehicle operable, item does not conform and noticed by discriminating customers (<25%)	2	**Minor Disruption**	Slight inconvenience to process, operation, or operator
No effect	No discernible effect	1	**No effect**	No discernible effect

Occurrence

Likelihood of Failure	Criteria: Ocurrence of Cause - PFMEA (Incidents per items/vehicles)	Rank
Very High	≥100 per thousand ≥ 1 in 10	10
High	50 per thousand ≥ 1 in 20	9
	20 per thousand ≥ 1 in 50	8
	10 per thousand ≥ 1 in 100	7
Moderate	2 per thousand ≥ 1 in 500	5
	0.5 per thousand ≥ 1 in 2,000	4
	0.1 per thousand ≥ 1 in 10,000	3
Low	0.01 per thousand ≥ 1 in 100,000	2
	≤0.001 per thousand ≥ 1 in 1,000,000	1
Very Low	Failure is eliminated through preventive control	1

Detection

Opportunity for detection	Criteria: Likelihood of Detection by Process Control	Rank	Likelihood of Detection
No. Detection opportunity	No current process control; Cannot detect or is not analyzed.	10	Almost Impossible
Not likely to detect at any stage	Failure Mode and/or Error (Cause) is not easily detected (e.g., random audits).	9	Very Remote
Problem Detection Post Processing	Failure Mode detection post-processing by operator through visual/tactile/audible means.	8	Remote
Problem Detection at Source	Failure Mode detection in-station by operator through visual/tactile/audible means or post-processing through use of attribute gauging (go/no-go, manual torque check/clicker wrench, etc.).	7	Very Low
Problem Detection Post Processing	Failure Mode detection post-processing by operator through use of variable gauging or in-station by operator through use of attribute gauging (go/no-go, manual torque check/clicker wrench, etc.).	6	Low
Problem Detection at Source	Failure Mode of Error (Cause) detection in-station by operator through use of variable gauging or by automated controls in-station that will detect discrepant part and notify operator (light, buzzer, etc.). Gauging performed on setup and first-piece check (for set-up causes only).	5	Moderate
Problem Detection Post Processing	Failure Mode detection post-processing by automated controls that will detect discrepant part and lock part to prevent further processing.	4	Moderately High
Problem Detection at Source	Failure Mode detection in-station by automated controls that will detect discrepant part and automatically lock part in station to prevent further processing.	3	High
Error Detection and/or Problem Prevention	Error (Cause) detection in-station by automated controls that will detect error and prevent discrepant part from being made.	2	Very High
Detection not applicable; Error prevention	Error (Cause) prevention as a result of fixture design, machine design or part design. Discrepant parts cannot be made because item has been error-proofed by process/product design.	1	Almost Certain

S.R. - 14: Guide for Special Activity during Launch Period

1. Outline

This guide describes Special Activity during Launch Period in order to verify the stabilization of the quality level during launch period.

2. Purpose of Special Activity during Launch Period

Special Activity during Launch period is not improvement period for quality system. The supplier shall verify created quality system in production preparation stage in order to prevent customer claim until end of production.

3. Preparation and implementation of the “Plan for Special Activity during Launch Period”

A “Plan for Special Activity during Launch Period” shall be prepared and implemented keeping the following points in mind. (Each production line include Tier N suppliers) The responsible person shall control and follow the plan.

In case of the following parts, the supplier shall submit the “Plan for Special Activity during Launch Period” with “PSW” for confirmation of JATCO. JATCO may request additional activity details, so please respond accordingly.The supplier shall notify the result to JATCO, when Special Activity during Launch Period finishes.

If any request received from JATCO during initial flow period, the status should be reported.

A) Newly developed parts and parts with additional new mechanism
B) Newly produced parts from new manufacturing or assembly line
C) Other parts judged especially necessary by JATCO

Note;
As a general rule, PT1 ~ SOP ~ SLP
Prohibit design / process change.
If you need to these change,
Please consult with JATCO supplier quality assurance department.

<Related Guide/Form>

Plan for Special Activity during Launch Period (Form-33)

4. Implementation procedure of the Special Activity during Launch Period

1) Assignment of a Responsible Person
   Assign the responsible person of this activity and pursue the activity.
2) Setting of quality targets
   The responsible person shall set (percentage) defective delivered to JATCO, percentage of defect in the process and percentage of achievement of the tasks as quality targets.

The following items are required.
0 major defects, 0 major defects, 0 defective deliveries at JATCO and customers

*Clarify the definition of in-process defect rate when setting it.
For example, In-house process has a defect rate of each equipment,
and subcontractors have a defect rate of each line etc.

3) Preparation procedure of Plan for Special Activity during Launch Period
The responsible person shall prepare the Plan for Special Activity during Launch Period using the following items as reference in order to evaluate quality system and stabilize the quality level promptly of volume production. Please incorporate confirmation of process capability of QA characteristics, control chart management data, and factorial management items into the activity plan.

(1) The supplier shall implement 100% or more frequent inspection and more frequent process-capability study in order to evaluate quality system .(ex: Evaluation of cutter life cycle, die/gauge/jig life cycle clean cycle of welding torch, etc.)

(2)The observation of operation for whether an operator follows standards (Operations manuals etc.) or identification of difficult operation shall be done.

(3)Getting timely failure information.
System improvement for quick action by using lessons learned database and horizontal deployment of countermeasures, etc.

(4)Guidance to the sub tier suppliers about Special Activity during Launch Period, improvement of control system.

(5)To clarify problem by upgrade of following activities and prevent the outflow of failures.
Implementation of 100% or more frequent inspection and more frequent process-capability study for QA Table(Quality design sheet) characteristics; QA characteristics, Semi QA Characteristics and characteristics for customer assemble, monitor CPK value not less than 1.33 and other characteristic may affect during assembled in transmissions.
Quick countermeasure of clarified problem and improvement of quality assurance method for QA Table(Quality design sheet) characteristics.
Implementation of 100% or more frequent inspection for important appearance characteristics.
Implementation of more frequent contaminant measurement and response for the parts that require contaminant control.
Implementation of dock audits.
Verification of inspection results on the same day to assign countermeasures with failures reported or confirm it.
Implementation of breakdown study and improvement the activity.

(6)Confirmation whether Traceability control is implemented along the "Guide for Traceability Control".

4)Period of special activity during launch period.

The Period shall be set until finished verification of quality assurance system.

(Because the period is related to type of parts or production volume, specific customer requirements please consult with the plant quality assurance department.)

Period of special activity during launching is decided by JATCO Supplier Quality Assurance section.

A guideline about period of special activity during launching is indicated as follows.

a . Parts for Project

	month	-n	1	2	3	+α*	
JATCO UNIT	Assembly start			SOP			
purchased parts	Start from PSW		SOP				end of JATCO UNIT Assembly's Special Activity during Launch Period

b . Process change and Design change

	month	1	2	3	+α*
purchased parts	Start from PSW		SOP		

c . Parts for phase in

	month	-n	0	+n	….	1	2	3	+α*	
JATCO UNIT	A s s e m b l y		Phase in		no production		SOP			
purchased parts	Start from PSW		Phase in		no production		SOP			end of JATCO UNIT Assembly Special Activity during Launch Period

＊α : requirement by JATCO's customers and JATCO

5) Setting of criteria to remove the Special Activity during Launch Period

The responsible person at the supplier shall set the criteria to remove the Special Activity during Launch Period.

The criteria shall include following items.

① The quality assurance system of volume production is verified.

② The quality targets (reject rate at process of supplier, delivery claim at Jatco and custmer, Critical/Significant Failures, etc.) are achieved.The following items are required.

0 major defects, 0 major defects, 0 defective deliveries at JATCO and customers

Supplier in-process defective target value or less

Other indicators shall be determined in consultation with JATCO.

③ The tasks about quality assurance have been closed.

④ All failures found during special inspection has been closed.

6) Submission of materials during Special Activity during Launch Period

Please submit the following documents every month during Special Activity during Launch Period.

Results materials: Process capability of QA characteristics and control chart management data

Factor-based materials: Confirmation results of factorial management items of processes related to QA characteristics

Additional items may be requested from JATCO.

7)Judgment to remove the Special Activity during Launch Period

The quality assurance department of JATCO shall make judgment of removal based if the removal criteria are accomplished. If the removal criteria have not been achieved, the activities shall be continued.

When canceling the Special Activity during Launch Period, submit the Special Activity during Launch Period plan to JATCO with the explanatory materials necessary for judgment and obtain the approval of JATCO.

Required materials to submit

Plan for Special Activity during Launch Period

(7. Listing the decision result of the cancellation decision committee and the signature of the supplier's judge))

Process capability control chart control data for QA table characteristics

S.R. - 15: Guide for Controlled Shipping

1 Outline

This guide prescribes the procedures for Controlled shipping.

JATCO may request special quality assurance activity (Control shipping) for delivery parts from the supplier, when delivery claim increase reoccurrence or production quality is not stable by JATCO's judgement.

2. Purpose of control shipping

Control shipping is used for prevention of delivered nonconformity parts by 100% inspection or measurement, etc. and verified of preventive action for occurrence and delivery, when JATCO judges' current quality assurance system cannot prevent to deliver nonconformity parts to customer.

3. Implementation Items

1) Decision of Control shipping

(1) JATCO requires control shipping to suppliers after the judgement of necessity of implementation of special controls in order to keep delivery quality, when JATCO judges the quality assurance condition of the supplier is not enough.

(Necessity is judged by manager of the responsible supplier quality assurance department of JATCO.)

In the case of emergency, the control shipping is coordinated by telephone or e-mail. After that, official document is issued.

(2)The Supplier's QA highest responsible person shall confirm receipt of document from JATCO immediately right after document is received the supplier shall coordinate with the responsible supplier quality assurance department of JATCO for acceptance or not.

After coordination, the supplier shall issue "Reply for request of control shipping" to the responsible supplier quality assurance department of JATCO for "Request of control shipping" from JATCO.

[Level of control shipping]

① Controlled Shipping 1 (CS1): The supplier shall maintain delivery of parts quality by adding an extra 100% verification (inspection, measurement, etc.) at supplier's facility.

② Controlled Shipping 2 (CS2): If the supplier's control after implementation of CS1 is not enough for maintain delivery of parts quality, control shipping shall be done by adding an extra 100% verification (inspection, measurement, etc.) by an approved external company at the Supplier's Facility, not at JATCO's facility implementation of CS2 do not exclude the supplier to remove CS1 inspection.

③ New Business on Hold (NBH): If the supplier's control after implementation of CS2 is not enough, the Supplier may be subject to New Business On-Hold; in this category the supplier must maintain the controls of the CS2 + Freeze in the Sourcing of New Pro

(3) JATCO requires CS2 of suppliers if JATCO judged CS1 is not effective, In case of there was

serious issue or request from customer, JATCO would request CS2 first.
Addition to the above, any cost incurred association with CS1, CS2 shall be settled at the responsibility of supplier.

(4) Suppliers have to pay fee of CS1 and CS2.

2) Request items for control shipping
   (1) Purpose and necessity of control shipping
   (2) An object factory, process and parts of control shipping
   (3) Method of control shipping (It determines, after coordinate with the supplier.)
   (4) Period of control shipping
   (5) Judgement criteria for finish of control shipping
   (6) Others (Agreement items in the discussion)

3) Improvement activity
   In case that control shipping is required, the supplier shall prepare the "Improvement Plan and Report for control shipping" in order to finish control shipping. "Improvement Plan and Report for control shipping" is issued to JATCO and confirmed by JATCO.

4) Exit criteria of control shipping
   Control shipping shall be finished after the confirmation of the following 3 items.
   (1) There is no outflow of the failure by control shipment in JATCO and control shipping area.
   (2) Prevention countermeasure for reoccurrence of failure by quality system after finished control shipping is verified by supplier quality assurance department of JATCO.
   (3) The tasks about "Improvement Plan and Report for control shipping" have been closed and validated that the Countermeasures for Occurrence and Scape have been corrected and are effective. Validation of effect shall be 90 days as a guideline. JATCO will decide on the period according to the scale of mass-production and concern item.
   The supplier inputs a result into the "Improvement Plan and Report for control shipping" and applies for the exit criteria of control shipment.
   JATCO confirms the "Improvement Plan and Report for control shipping" and judges that actions taken are acceptance or not. Judgement of JATCO is input into the "Improvement Plan and Report for control shipping" and reply to the supplier.
   In the case of a recurrence, we may request controlled shipping again.

4. Others
   CS2 is requested when CS1 is not enough as a rule. But JATCO may request CS2 from the beginning for the reason of failure mode or customer's requirement, multiple defects in short period, etc.

<Related Guide/Form>

Request of control shipping (Form-20A)
Improvement Plan and Report for control shipping (Form-20B)
Reply for request of control shipping (Form-20C)

S.R. – 16: Guide for Control Plan

1. Outline

This guide prescribes the procedures for Control plan.

The Control plan is a document that describes control methods and characteristics controlled during the entire volume production process, from receipt of materials and raw materials to delivery of ~~the~~ parts. The Objective is for the supplier to establish the quality assurance method. The control plan shows all control items of quality and control method and judgement, etc. in the volume production. The control plan is basic procedure for production control. This guide is based in AIAG Reference Manual – APQP 2nd ed. (or latest version)

2. Scope

1) The control plan shall be developed for all processes from receipt of materials and raw materials to delivery of the part and shall be followed strictly.
2) When the supplier purchases parts from sub tier suppliers, the responsibilities for quality assurance shall be clarified. Quality control shall be done using control plan.
3) When the same kinds of parts are produced with the same process, prepare basic control plan with different point of each part number. Add the part numbers and other details.

3. Preparation timing

The control plan shall be prepared before the following timing.

Produced parts by die/mould: VC lot

4. Format

1) The formats below are the basic formats of control plan, but it is possible for the suppliers to use their own format.

Process flow chart

Control plan

2) Control plan shall include following items.

- Process flow, Process name (including rework process, handling, etc.), Equipment.
- Control characteristic (Special control target of Results and Elements), Control value, Severity, Frequency, Control method (Measurement tool, inspection tool, etc.), Confirmation method, Responsible department, Record method and Inspection frequencies.
- Reaction plan for occurrence of abnormal situation
- Check item for equipment, manufacturing condition: Different format is possible to use, but relationship with control plan have been clarified.

-If recycled materials are used, please indicate so in the notes section of the relevant process.

<Related Guide/Form>

Process Flow Chart (Form-6)

Control Plan (Form-7)

5. Submission of documents

In case of new parts, the supplier shall submit complete control plan of all processes. In case of the design/process change, the supplier shall submit cover and changing point.

Submit two copy of control plan to the responsible supplier quality assurance department of JATCO as a rule. (Submission timing shall be fixed based on “Guide for New Product Quality Procedure for Production Preparation Stage” and “Guide for Change Control”.)

The responsible supplier quality assurance department of JATCO returns one copy to the supplier.

6. Items to be Included

1) Be careful that the descriptions do not differ from the required specifications.
2) In the revision notes column for reason of change, describe the reason of change (design release No. etc.) or the first edition etc. so that it can be traced to drawings or other standards easily.

7. Important Points

1) Prepare a control plan which covers all processes of “receive of material and part” to “packaging and delivery” (including sub tier suppliers) from the receiving time of material or parts until packaging for shipment so that it can serve as an instruction guide which can guarantee all characteristics(*1) in the drawing.
   (Process number shall be same in process flow chart and control plan.)
   (*1) If there is a part indicated as a standard part in the drawing and other specifications, the characteristics specified in the corresponding technical standard (JDS, NDS, etc.) are also included.
2) Control plan shall be prepared based on the process FMEA.
3) Quality of process shall be guaranteed on the basis of a quality check in production process.
4) Correlation of information between control plan and operation manual shall be clarified for all operations.
5) Control plan shall include all process (including rework process, handling, etc.).
6) Definition of limit samples shall be clarified by control plan.
   When limit samples are necessary, get approval from the responsible supplier quality assurance department of JATCO.
7) Storage and analysis of the pending parts, rework parts and nonconformity parts shall be added to control plan.
8) Frequency of “Layout inspection” and “Inspection of All Characteristics in the Drawing” (including function test) shall be added to control plan.
9) The record method (document) of quality record shall be clarified, assigning control number of the document.
10) Control plan for sub tier suppliers shall be prepared using this Guide.
   (Different table is possible to prepare for sub tier supplier.)

<Related Guide/Form>

Guide for Inspection Standard, Master Sample (Supplementary Rule17)

Supply Chain Registration Control Sheet (Form 47)

8. Others

1) Control plan is used for product or process audit. Revision of control plan shall be done in order to keep optimum condition.
2) Countermeasure of defect recurrence prevention shall be performed by analysis based on control plan. Guarantee method shall be revised.
3) In the case of change (design change, process change, change of guarantee method, and others), the supplier shall revise control plan. Latest version of control plan shall be controlled.
4) Submit control plan of sub tier supplier after supplier approval.
5) Control plan shall be retained for 10 years from the end of the order (production stop).

S.R. – 17: Guide for Inspection Standard and Limit Sample

1. Outline

This guide describes preparation of inspection standard and limit sample and procedure.

2. Inspection standard

1) Format

Inspection report shall be completed using “Inspection Standard” format for each models produced. Report must be agreed between the supplier and the supplier quality assurance department of JATCO.

The two formats below are the main formats for inspection standard, but it is possible for the supplier to use its own format. But all items of JATCO specification shall be included.

	Format	Application
Individual Standards	Inspection Standard (Individual)	Cases with few types of models
Group Standards	Inspection Standard (Group)	Cases with many similar models

(1) Following inspection items shall be categorized and included.

General Inspection

Inspections of dimensions, characteristics, parts cleanness, leak characteristics, and other items described on the drawing or other specifications(*1).

<Parts Cleanness>

Parts cleanness shall be measured based on the drawing or “Guide for Establishment of Parts Cleanness Standard”.

Laboratory Inspection

Physical, metallurgical, and chemical inspections such as materials’ constitution, hardness, case depth, and other items found on the drawing or other specifications(*1).

Performance Inspections

Inspections of the products durability, strength, and other items found on the drawing or other specifications(*1).

Function Inspection

Tests of performance items described in the drawings and performances requested by customers.

Inspection of all dimensions in the drawing (Layout inspection)

Inspections of all dimensions found on the drawing or other specifications(*1), General inspection items and Laboratory Inspection

Inspection of All Characteristics in the Drawing

Inspection of all dimensions in the drawing, Performance test, material specs and Function test.

(*1) If there is a part indicated as a standard part in the drawing and other specifications, the characteristics specified in the corresponding technical standard (JDS, NDS, etc.) are also included.

(2) Inspection items refer to 100% finish product.
(Items of inspection standard shall be confirmed by JATCO.)

(3) Inspection standard shall be include following items

- Inspection number
- Inspection item
- Severity
- Inspection frequency
- Inspection method (Standard of measurement, Inspection tool, Inspection equipment, etc.)
- Measurement equipment should be measured directly 1/10 scale for range of tolerance.
- Judgement standard (including limit sample)
- Sketch of the part

(4) Notes

- Described in the remarks column QA table characteristics
- Also, if Cpk is 2 or more, etc., and the SPC is unnecessary, please described in the remarks column of "Inspection Standard" that the SPC is unnecessary.
  Please refer to S.R-7 for characteristics that do not require SPC.
- Described in the remarks column complicated measuring method.
- Described in sketch for measuring point of hardened layer depth.

2) Submission and Acceptance

(1) Submit the original and one copy of the "Inspection Standard" to the responsible supplier quality assurance department of JATCO according to Guide for Control of Documents, Data, and Quality Records before the 1st production trial.

(2) The original will be returned to the supplier after the standards are accepted.

(3) If there is any incompleteness or nonconformity in the submitted contents, the supplier will be asked to revise or correct it.

(4) In the case of change (design change, process change), the supplier shall execute changing procedure. Inspection standard shall be revised original document. In case of "format change" and "revision of original file" and others, the supplier shall attach latest document with JATCO approval for proof that changing point is nothing.

(5) Definition of lot shall be clarified for inspection frequency
Note: Frequency of control plan is included in inspection frequency of inspection standard.

<Related Guide/Form>

Guide for Control of Documents, Data (Supplementary Rule2)

3. Limit Sample

1) Format

(1) For parts where it is difficult to describe criteria (limit) for the quality characteristics required by JATCO, establish a limit sample using “Approval Report for Limit Sample”.

(2) Area, position, dimension, colour and others shall be described in the “Approval Report for Limit Sample”. The “Approval Report for Limit Sample” shall be prepared used by simple expression (picture, etc.), as everyone can understand easily.

(3) Establish the term of validity of the limit sample according to its quality characteristics.

2) Submission and Acceptance

(1) When establishing a limit sample, send two samples and ~~two copies of~~ the “Approval Report for Limit Sample” as a general rule to the responsible supplier quality assurance department of JATCO. If samples could not be sent, paste a photo on the sketch area of the “Approval Report for Limit Sample” (Form-17).

(2) JATCO will return the approved limited sample application form and one limited sample product for the supplier’s use . JATCO will keep a copy (copy or electronic data) of the approved limited sample application form and one limited sample product.

(3) The limit sample shall be used as a quality standard during inspections, in the same way as the inspection standard.

(4) Apply for a renewal following the procedure in (1) when the term of validity ends, or if the judgment criteria have been changed for the applicable characteristic, or if JATCO has requested a change.

3) Control

(1) When the supplier keeps and controls limit sample, sufficient control for limit sample shall be done in order to prevent change of limit criteria by rust, dirt, scratch, etc.

(2) Periodical confirmation shall be done to confirm limit sample does not change. The result of this confirmation shall be recorded.

<Related Guide/Form>

Inspection Standard (Individual) (Form-24, 25)

Inspection Standard (Group) (Form-26)

Approval Report for Limit Sample (Form-17)

S.R. – 18: Guide for Measurement system analysis (MSA)

1. Outline

The supplier shall define the evaluation method of accuracy for measurement equipment, inspection tool and test equipment. Submit the results using statistical examinations to show the validity of the measurement systems in order to use in enough capability of measurement. Measurement equipment, inspection tool and test equipment shall be used under enough capability condition.

2. Evaluation items

The supplier shall perform measurement system analysis using following characteristics.

1) Repeatability

Variation of measurement result by one operator. (Same parts and same characteristic are measured by same measurement system).

This variation is called EV (Equipment Variation).

2) Reproducibility

Variation of measurement result by plural operator. (Same parts and same characteristic are measured by same measurement system).

This variation is called AV (Appraise Variation).

3) Stability

Variation of measurement results in long term. One characteristic of same master or part shall be measured by same measurement equipment.

[Verification method] - Verification by X-R control chart

Judgement of abnormality by data plot: Control chart (JIS Z 9021 ('98))

- Estimation value of Standard deviation

4) Bias

The difference between a standard deviation and the average of measurement result shall be verified. Shape of histogram shall be verified.

[Verification method] - Verification by histogram

- Numerical analysis

5) Linearity

The degree of bias from estimation line of gage.

[Verification method] - Verification by correlativity and a regression line.

- Numerical analysis

* "Stability", "Bias" and "Linearity" shall be submitted.
* Evaluation Method must be in accordance with MSA AIAG 4th Version or latest.

3. The comprehensive evaluation method “Gage R&R” for “Repeatability” and “Reproducibility”

“Gage R&R” is used for the comprehensive evaluation method of “1) Repeatability” and “2) Reproducibility”.

There are three methods for evaluating. Use the appropriate method.

1) Attribute Method: Total variation of measurement system shall be clarified. But “Repeatability” and “Reproducibility” are inseparable.
2) Average and Range Method: An estimated-possibility mathematical method that separates repeatability and reproducibility out of the variation of the measurement system.
3) ANOVA Method: A high-level method using variance analysis, it is used in analysing measurement errors and data variable factors.

The “Average and Range Method” is described below.

For details, refer to AIAG Reference Manual – MSA 4th ed. (or latest version)

4. Average and Range Method

(In case of Measurement gage)

1) Measurement (Obtaining Readings)

Select 10 different samples, three appraisers and one gauge.

Rule:

In case of measurement 0.01 range, the measurement range of parts should be 10 times the resolution (0.001).

Ten difference samples shall be distributed equally throughout the measurement area.

Operator shall measure each parts3 times in random order.

Measurement shall be executed in actual process (including environment)

Enter the results of each measurement into the prescribed format (Left side).

Method of measurement:

Operator shall not measure same part, same position successively.

Measurement of sample shall be done randomly.

2) Verification

The supplier shall calculate EV (Repeatability: Equipment Variation), AV (Reproducibility: Variation of measurement method), R&R (Repeatability& Reproducibility), PV (Part variation of part) and TV (Total variation). (Calculate shall be done in the prescribed format automatically.) %EV (Repeatability: Equipment Variation), %AV (Reproducibility: Variation of measurement method) * ndc（number of distinct categories ）shall be inputted to the prescribed format (Right side).

* ndc, is an abbreviation of the Number of Distinct Categories, the number of segments from the perception represents, the resolution divided into number of categories.

In the calculation, it will be = (1.41)*[PV / R & R]

3) Judgment

(1) Criteria for gauge R&R (Repeatability and Reproducibility)

R&R(%)≤10 --- OK, no problems

10<R&R(%)≤30 --- Decide usable or not depending on process importance (Based on JATCO Judgment)

30<R&R(%) --- Improvement is necessary

(2) Criteria for variation (Repeatability) of measuring equipment

EV(%)≤10 --- OK, no problems

10<EV(%)≤30 --- Decide usable or not depending on process importance

30<EV(%) --- Improvements, measuring equipment specification changes, etc. are necessary

(3) Criteria for variation (Reproducibility) of measuring methods

AV(%)≤10 --- OK, no problems

10<AV(%)≤30 --- Decide usable or not depending on process importance

30<AV(%) --- Change of measuring environment, further education of measurers, etc. are needed

(4) Criteria for ndc（number of distinct categories）

ndc ≧ 5 ……OK, no problems

ndc ＜ 5 ……Improvement is necessary（Regardless result of %R&R, %EV, %AV）

4) Report

Result of Gage R&R is controlled by presented the report.

TV is used for process improvement. TOL is used for judgement of production parts.

Using method of TV and TOL shall be clarified.

<Related Guide/Form>

Measurement Systems Analysis (Gauge R&R Data Calculation Sheets) (Form-18)

Measurement Systems Analysis (Gauge R&R Report Sheets) (Form-19A)

5. Measurement system analysis for attribute gages

1) Preparation of measurement parts

Select 8 samples at the equal interval.

Select conditions of 50 samples are as follows.

From the 50 Samples 15 should be No Good and 10 Marginal (5 near upper limit 5 near lower limit)

Select of samples is continued until it satisfies the above conditions.

Indication number is attached to these samples by tag or writing directly.

Selected samples shall be kept until verification result is approved.

2) Measurement

Measure 50 samples 20 times, record the number of pass (a).

Measurement result is written as follows.

Pass: 1 Reject: 0

3) Calculation for judgement

$$P'a = \begin{cases} \dfrac{a + 0.5}{m} & \text{if } \dfrac{a}{m} < 0.5 \quad a \neq 0 \\ \dfrac{a - 0.5}{m} & \text{if } \dfrac{a}{m} > 0.5 \quad a \neq 20 \\ 0.5 & \text{if } \dfrac{a}{m} = 0.5 \end{cases}$$

m: the number of time of measurement

4) Plot to date sheet

(1) P'a value (vertical axis) after calculated by 3) is plotted to date sheet.
Horizontal axis is measurement result of parts.

(2) Write the approximation line using plotted date.

5) Calculation of Bias

Bias = Low limit – Xt (at P'a = 0.5) (Xt : Indication value)

Xt (at P'a = 0.5) is standard value related to P'a = 0.5 of 4).

Gage R&R of measurement system of measured samples in order to measure the reference value. The parentage value is inputted to cell P12 in the calculation sheet.

6) Calculation of Repeatability

$$\text{Repeatability} = \frac{Xt \text{ (at P'a=0.995)} - Xt \text{ (at P'a=0.005)}}{1.08}$$

Numerator is different of indication value. (Xt (at P'a=0.995) – Xt (at P'a=0.005))

Xt(at P'a=0.995) is indication value related to P'a = 0.995 in data sheet of 4).

Xt(at P'a=0.005) is indication value related to P'a = 0.005 in data sheet of 4).

Denominator value (1.08) is defined based on the simulation of this method. If sample number is 20, this value is use for calculation.

7) Judgement of Bias

$$\frac{31.3 \times |\text{Bias}|}{\text{Repeatability}}$$

Calculation value used by above formula shall be more than 2.093(t025,19).

<*Related Guide/Form*>

Measurement Systems Analysis (Gauge R&R Data Calculation Sheets) (Form-18)

Measurement Systems Analysis (Gauge R&R Report Sheets) Measurement Gages (Form-19A)

Measurement Systems Analysis (Gauge R&R Report Sheets) Attribute Gages (Form-19B)

Measurement Systems Analysis (Sample of Gauge R&R Report Sheets) Attribute Gages (Form-19B)

S.R. – 19: Run @ Rate

1. Outline

This guide prescribes the procedures for Run @ Rate

2. Purpose

The purpose of a Run @ Rate is to verify below points.

1) The supplier's actual manufacturing process is verified to meet JATCO's quality requirements. The parts produced by presented process ability and production time are verified to meet JATCO's quality requirements.
2) The supplier's actual manufacturing process conforms to the manufacturing and quality plan documented by the procedure of parts submission warrant (PPAP), and other required documentation.

3. Scope

The responsible supplier quality assurance department of JATCO selected objection parts based on condition (new engineering, new manufacturing method, new factory, new equipment, and etc.) of purchasing parts. JATCO notifies coordination result to the supplier after coordination with the supplier.

4. Timing of Run @ Rate

The Run @ Rate should be performed after the supplier has met volume production condition (i.e.PT2). Schedule of Run @ Rate shall be coordinate with the responsible supplier quality assurance department of JATCO and fixed.

5. Procedure of Run @ Rate

1) Preparation of document

Required document in "Guide for New Product Quality Procedure for Production Preparation Stage" shall be prepared in volume production condition.

2) Production condition and volume

- The maximum production capability (upper limit of production capability) of time and volume of production is used.
- Operator structure of Run @ Rate is same as volume production structure.
- Production volume at Run @ Rate is coordinated with the responsible supplier quality assurance department of JATCO beforehand.

3) Participant

Participated departments are nominated by responsible person of quality assurance of the supplier.

Maker of equipment and sub tier supplier shall participate.

Note: The responsible supplier quality assurance department of JATCO may participate to Run

@ Rate, if necessity.
Other department (Development, Purchasing, Production control etc.) of JATCO also participate.

4) Confirmation items

(1) Production process

a, Process preparation have been prepared based on control plan and etc. (Production tool, jig, gage, operator, production method, material, production environment, etc.)

b, Process have been conformed to the process flow.

c, Operation manual (Control plan, standard operation manual), etc. have been placed in working area. Operation conforms to the operation manual.

d, Limit samples have been prepared in working area.

e, Quality records (Control chart, check sheet, etc.) have been prepared.

f, Standard for equipment (Maintenance, check sheet for start timing of each shift, etc.) have been prepared.

g, Parts for rework and maintenance, tool and jig have been prepared.

h, Downtime of equipment for maintenance is same as plan.

i, All concerning points of production preparation stage have been closed.

(2) Production capability

a, Net output from each process meets quoted capacity.
(Net output : scrap taken out, any allowable rework)

b, During the Run @ Rate, the tooling must meet the quoted up time requirements (net vs. gross quoted output).

c, All line changeovers, if any, can be performed within the quoted tooling capacity requirements.

d, Rework must meet quoted capacity.
(Net output of OK part: The number of OK parts with reworked parts)

e, All concerning points of production preparation stage have been closed.
Any unexpected downtime must be documented and corrective action taken.

(3) Establishment for quality assurance

a, Measurement equipment, measurement jig, etc. shall be prepared and operation manual shall be prepared.

b, Measurement system analysis (i.e., Gauge R&R) is performed.

c, Quality confirmation shall be executed based on control plan and result shall be recorded.

d, Potential failure modes, as identified in the PFMEA, are addressed through error-proofing or the control plan.

e, As Special Activity during Launch Period, establishment for early corrective and containment action when failure mode occurs.

f, All concerning points of production preparation stage have been closed.

(4) Part Quality

Parts Quality must meet quality requirement.

(Process capability and etc. must meet requirement.)

(5) Detection and rework of Non-conformity parts

a, Non-conformity parts shall be detected by detection process, etc. based on control plan.

b, In case that non-conformity parts is detected, Process FMEA shall be updated and countermeasure shall be taken.

c, Action for non-conformity parts shall be taken based on reaction plan.

Note: The total number of parts produced, the pieces rejected and the pieces reworked need to be documented on the "Run @ Rate Calculation Sheet".

(6) Requirements for sub tier supplier

Quality and capability of sub tier supplier shall be meet JATCO's requirement. All concerning points of production preparation stage have been closed.

Process confirmation of sub tier supplier is confirmed using "Run @ Rate" or "Similar method" by the supplier. Confirmation of sub tier supplier shall be confirmed before Run @ rate timing of the supplier.

5) Handling for produced parts by Run @ Rate

Produced parts shall be produced using drawing of volume production.

In case that PSW is approved without drawing change, the supplier can deliver produced parts by Run @ Rate to JATCO for volume production parts with "Initial product control".

6) Report of result

This plan shall be sent to the responsible supplier quality assurance department of JATCO, within two (2) business days of the completion of the Run @ Rate.

6. Countermeasures

All concerning points after Run @ Rate have been closed before PSW approval by JATCO.

7. Judgement

JATCO judges for Run @ Rate result based on report from the supplier. ("Pass", "Open", "Fail"). If JATCO joins Run @ Rate, JATCO make judgement as that timing.

1) Pass

Definition: All requirements were met.

Possible constraint operation (≦90%) Please see "Form-50A"

2) Open

Definition: Non-conformance exists and improvement shall be needed

(Action)

(1) Corrective Action Required

A documented Action Plan to correct the non-conformances is required.

Action plan shall be included following items.

Responsible parson, detail information, timing of introduction and validation of corrective action

This plan shall be sent to the responsible supplier quality assurance department of JATCO, within five (5) business days of the completion of the Run @ Rate.

(2) Verification of corrective action

JATCO verifies the successful completion of the corrective action plan by several different ways, for example, a document review, a part review or a plant visit. Once the Corrective Action Plan is successfully completed, the responsible Supplier Quality assurance department of JATCO will change the Run @ Rate result from open to pass.

3) Fail

Definition: Serious non-conformance exists and improvement shall be needed.

Critical non-conformance exists, because quality establishment is not enough..

Ppk values (Cpk values) do not meet requirements or supplier fails to meet Volume Requirements, etc.

(Action)

(1) Corrective Action Required

A documented Action Plan to correct the non-conformances is required.

Action plan shall be included following items.

Responsible parson, detail information, timing of introduction and validation of corrective action

This plan shall be sent to the responsible supplier quality assurance department of JATCO, within five (5) business days of the completion of the Run @ Rate.

(2) Verification of corrective action

Additional Run @ Rate will be required after take corrective action.

The responsible supplier quality assurance department of JATCO may join to Run @ Rate.

8. Difference between production trial and Run @ Rate

Following table shows difference between common production trial and Run @ Rate.

Item	Production trial	Run@Rate
Parts selection	All	Required parts by JATCO
Timing	PT2	←
Process	Regular process	←

Production condition		Regular condition	Maximum production capability
	Production time	Volume production time	Maximum capability time
	Operation speed of equipment	Volume production condition	Maximum operation speed
	Operator	Operator	←
	Operation procedure	Normal operation	←
	Production shift	1 shift	Maximum shift
	Changeover	Volume production condition	Maximum condition
	Attendance of JATCO	If necessity	Necessity as a rule (Coordination is possible)
	Preparation of document for maintenance	Necessity	←
	Preparation of tool for maintenance	Necessity	←
	Limit sample and standard	Necessity	←
	Production volume	300 parts（as a rule）	Maximum production volume of one day
Record (Submission document)		Required from JATCO	Based on work sheet Number of shift (Week, Day) Downtime The rate of operation Total number of production for all customer Number of Rejection, Reject rate Cycle time, etc.

<Related Guide/Form>

Run @ Rate Calculation (Form-50A)

Run @ Rate Report (Form-50B)

S.R. - 20: Guide for Establishment of Parts Cleanness Standard

1. Outline

This guide prescribes the procedures for Establishment of parts cleanness standard.
Basically give priority to the drawing instruction. If there is no instruction in the drawing, at first please contact with the responsible person of JATCO R&D

1) Purpose

This guide clarifies a calculation method of contamination standard and measurement method of contamination when the supplier controls and evaluates the contamination for the parts supplied to JATCO.

2) Scope

In principle this guide shall apply to all parts supplied to JATCO, but external parts (CLIP, etc.) and Parts that all material surfaces are machined at JATCO and etc. are not applied. The supplier shall decide in consultation with the responsible supplier quality assurance department of JATCO for not applied parts.

*Establishment of contamination standard and measurement method of contamination shall be basically done in accordance with the following procedure. In case that JATCO gives indication separately, supplier shall follow this indication.

2. Evaluation Characteristics and Criteria for Contamination

1) Evaluation Characteristics for Contamination

The size and weight of contamination

2) Criteria for Contamination

(1) Contamination Size

・General: There shall be less than 0.4 mm2 of the projection area
・Parts in oil circuit: There shall be less than 0.16 mm2 of the projection area
(Details shall prevail to the drawing standard)
＊Projection area shall be set to the maximum value

General: There shall be no contamination that the projection area over 0.4 mm2.
Parts in oil circuit: There shall be no contamination that the projection area over 0.16 mm2.
(Details are refer to the drawing)
Parts in lubrication circuit for the belt and or contact with the belt. There shall be no contamination that the projection area over 0.01 mm2 and over HRC 30 contamination. (Details are refer to the drawing)

(2) Contamination Weight

Standard value shall be less than the weight (W) calculated by the following formula.

a) Iron parts $W_{Fe} = 0.07\sqrt{A_{Fe}}$: formula 1
b) Aluminium parts $W_{Al} = 0.03\sqrt{A_{Al}}$: formula 2

c) Non-metallic parts $W_{Non}=0.01\sqrt{A_{Non}}$: formula 3

W: Standard for contamination weight (mg)

A: Surface area of the part (cm^2)

*In regard to the component parts made by 2 or more materials, it shall be calculated by multiplying the above material, a), b) and c) respectively by ratio of areas of each part and summed them up. (For example; $W=W_{Fe}+W_{Al}$)

3. Procedure

1)Calculation Method for Weight Standard

(1)Confirmation of object

It shall be confirmed whether it is subject part.

In case of obscure it shall be inquired to the responsible supplier quality assurance department of JATCO.

(2)Calculation of the Part Surface Area

The surface area shall be calculated based on its part drawing.

Forming parts and casting parts may be regarded as uniform thickness, and are allowed to calculate in accordance with the simplified method of the following.

・Simplified calculation method of surface area

$A = 2 \times W / t \cdot r$: formula 4

A: Surface area of the part (cm^2)

W: Weight of the part (g)

t: Thickness of the material (cm)

r: Density (g / cm^3) e.g. Fe = 7.9 and Al = 2.7

(3)After the calculation of the surface area, a weight standard for contamination shall be calculated by using the said formula a, b, or c.

Calculation method for more than two combination parts is below.

Example 1cm cube Fig1

(4) Revision of Criteria

In case of either of the followings, the criteria should be revised

a) When the size and / or shape are dramatically changed by design change. (Change over 10% surface area)

b) When the required quality is changed.

c) When revision is required due to a result of an actual value investigation.

2) Contamination Measurement Method

(1) Measurement Instruments

See Appendix 1, MEASUREMENT INSTRUMENTS.

(2) Measurement Method

a) Preparation of Filter

To dry the nylon filter (40 μ) on a culture dish in 60 minutes using the thermostatic chamber of 105 degrees, then to put in into a desiccator in over 60 minutes to return to room temperature, and then to measure the weight of the nylon filter by using the electronic balance (the accuracy 0.1 mg max.).

b) Washing

・To do hand washing (back/forward , right/left , up/down , each five times) under the condition that whole the part is being soaked in the washing liquid.

・When taking the part away from the washing liquid, to do spray washing sufficiently so that the contamination will not stick to the part again.

NOTES: Provided that a bigger part cannot be soaked in the washing tank, only spray washing is allowed. In that case, however, an amount of sprayed washing liquid shall be recorded (The amount which can wash whole the surface twice).

Tentative Aim for Spraying Amount (ml) = Surface Area (cm) × 0.5

c) Percolation of contamination

To filter the washing liquid which is used for washing the part by using the nylon filter (40 μ) that its weight has been measured.

NOTES: The inside of the washing tank shall be also washed carefully in order to remove contamination.

d) Weight Measurement

・To measure the weight of the nylon filter or other specified by JATCO, which has gathered the contamination in accordance with " ① Preparation of Filter ".

・The weight of the contamination to be the difference of the weights (Weight d) - Weight a))

・In case that the weight of the contamination is less than 1.0 mg due to smaller parts etc., a number of sample shall be increased to reach 1.0 mg.

e) Number of contaminations and Size Measurement

・A number of the contamination on the used filter or other specified JATCO which is 0.4 mm2 or over shall be counted and measure size by using microscope (×10 or ×20or×40) or digital microscope.

Please compare the measurement results with JATCO to ensure consistency.

The format of the materials is optional.

Appendix 1: MEASUREMENT INSTRUMENTS

1. Washing liquid: Water-soluble anti-corrosion washing liquid (5%-10% dilution): *1
2. Washing tank: Stainless tank which can soak the whole sample part
3. Washing bin: Hand spray made of plastics
4. Nylon filter: 40 micron (μ) filter (Or other specified by JATCO) : *2
5. Percolation equipment
6. Suction equipment: Vacuum pump
7. Thermostatic chamber
8. Desiccator
9. Chemical Balance: The accuracy to be 0.1 mg or below
10. Microscope: The magnification to be 10 to 40 approximately

For Reference: Instruments using in JATCO

*1 : 1)Parchem 4980 (5%-10% dilution) 2)Duffny cut HL-25（for Ultrasonic）3)Solvent M-0

*2 : 40 μ nylon filter (Diameter 55 mm)(recommended)

<Related Guide/Form>

Contamination Task Sheet (Form 32(1))

Process Control Check sheet for Residual Burr/chips by manufacturing method (Form 32(2))

Documentation procedures and example of Contamination Map (Form32 contamination map)

S.R.-21 Guide for Purchased Parts DR

1. Purpose of Implementation

The purpose of this activity is identify the novelty of parts in production efficiently and without any Omissions, and achieve off-process lot level of quality after SOP and maintenance.

2. Applicable scope of Purchased Parts DR Activity

The applicable scope shall include all parts to be new parts or specified by JATCO.

3. What is a Purchased Parts DR Activity?

This is an activity that Quality Assurance Department of JATCO to perform production preparation and process design

Review for Purchased parts.

This will be carried out for new parts and the parts with new process, and review the result of a series of activity plans

from identifying any issues, making quality check plan and result of validation and extended to process check.

4. Description of activity and necessary document of Purchased Parts DR

Purchased Parts DR	Purpose	Timing of Implementation Starting – Completion	Description of Review	Documents to be prepared	(○:Responsible of preparation)	
					Supplier	JATCO
# 0	The items to be continuously reviewed at Purchased parts DR shall be determined based on change / changing point, criticality of failure mode, Presence / absence of special mode.	Within a month following finalizing of supplier or time specified by JATCO	・Any changes/change points should be identified without omissions. ・Novelty of change/change point should be appropriately assessed. ・Failure mode should be appropriately assessed. ・Presence/absence of special process should be appropriately judged.	Written materials clearly showing drawing and parts specification	○	○
				Result of Risk Assessment, Briefing materials		○
				Parts Specification Comparison Table		○
				4M List	○	
				Process Flow Chart	○	
				4M Questioner	○	

# 1	Any technical issues shall be identified and make an assessment for expected level of difficulty to solve problems.	Following finalizing of suppliers or time specified by JATCO	・Technical issues for change/change point, critical failure and special process should be identified. ・There should be a correct system of incorporating ASSY drawing of parts that specify specifications into a single item drawing.	4M List		○
				Concern List	○	○
# 2	Solution/conformation method of technical issues and validation of the plan shall be evaluated.	Following finalizing of suppliers or time specified by JATCO	・Solution to technical issues should be validated. ・The method to assess/check the output obtained from solution of the issues should be clarified. ・Problem resolution plan should be carried out according to the project schedule. ・There should be backup plan and the time of judgement must be clarified.	Problem resolution plan /Backup Plan	○	
				Concern List	○	○
# 3	Prospect of solution to the issues shall be confirmed.	Before Design Release or time specified by JATCO	・Having clear prospect of solving technical issues. ・There should be expectation of process capability and achievement forecast.	Concern List	○	○
# 4	Presence /Absence of Novelty in change/changing point, criticality of failure mode and special process shall be reconfirmed with specification for Design release to determine for presence of any additional technical issues.	Design Release to VC Lot or time specified by JATCO	・Any changes/changing points should be identified without omissions. ・Novelty of change/change point should be appropriately assessed. ・Failure mode should be appropriately assessed. ・Presence/absence of special process should be appropriately judged .・If there are any additional technical issues, additional Purchased parts DR schedule.	Production Drawing	○	
				4M List		○
				Concern List	○	○
# 5	Make sure to confirm that any technical issues are solved at Off-process.	PT1 to SOP or time specified by JATCO	At OFF-process ・Any technical issues should be closed. ・There should be no problem as a result of the quality check. ・Process capability should be attained the target value. ・Control method at SOP should be clarified. ・The items to be verified at Supplier process audit should be clarified.	Concern List	○	○
				Inspection Standard	○	
				Process FMEA	○	
				Control Plan	○	
				Standard Operation Manual	○	
				Process Capability Study Report	○	

<Related Guide/Form>

- *・Process Flow* （*Form 6*）
- *・4M List* （*Form 61*）
- *・Concern List* （*Form 65*）
- *・Inspection Standard (Form 24, 25)*
- *・Process FMEA* （*Form 8*）
- *・Control Plan* （*Form 7*）
- *・Process Capability Study Report* （*Form 15A/B*）