

Tachi-s México Supplier Quality Manual

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> > Tachi-S México

Purchasing Department Control production Department Quality Assurance Department

April 10th, 2019

S TACHI-S México

Dear Supplier:

This Quality Handbook has the purpose of stablish the work procedures between customer and supplier, which allow the standardized control of the quality of all the parts acquired by Tachi-s Latin America (hereinafter referred to as "Tachi-S"). At the same time, we look to strengthen and ease the tasks performed by the companies involved.

For its elaboration, the 20.1th edition of the Tachi-S Co., Ltd Manual was taken and adapted to the necessities of the Latin America Region, with the objective of acting with certain during the execution and supervision of the tasks of the suppliers, allowing the compliance of the specifications required by Tachi-S. However, its review and modification will continue, in order to improve its content.

The use and implementation of this Manual is obligatory for all suppliers of Tachi-S in the Latin America Region, without exception. In case of doubts or clarifications, the Quality Assurance Department or Quality Control Departments can be contacted.

Please sign this letter and send it back by e-mail to your SQA contact. If we do not receive it signed, or there is not notification of disapproval within 30 days period, we will assume every requirement and specific instructions is clear and accepted.

We appreciate your attention.

Respectfully

Efrain Silva Torres

Quality Director of Regional Head Quarter Tachi-S Latino America



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- About quality records retention

As quality records retention cycles of each customer requirements are different, we separate by following displays. Supplier should keep each retention cycles and should keep Tachi-S retention.

Table 1. Records retention cycles

Retention of records of Tachi-s suppliers			
Document type	Retention Period		
Revision and implementation of engineering changes	20 years		
Internal Audits	20 years		
Maintenance Records	20 years		
Corrective Action Records	20 years		
Product traceability	20 years		
Records that represent quality assurance	20 years		
Related to regulatory requirements	20 years		
FMEA and Control Plan	20 years		
Validation records of production design and validation.	20 years		
Verification and calibration records	20 years		
Special agreements	15 years		
Work Instructions	15 years		
Other Records	5 years		



GLOSSARY

SQC: Representative of Tachi-s on charge of Supplier Quality Control

SQA: Representative of Tachi-s on charge of Supplier Quality Assurance

QA: Quality Assurance

QC: Quality Control

AIAG Automotive Industry Action Group

QRQC: Quick Response Quality Control

APQP: Advanced Product Quality Planning

Cross-functional team: Activity team with all departments in each function: Design development division, Production division, Sales division, Purchasing division etc.



Tachi-s Mexico Supplier Quality Manual

<u>1. Preface</u>

1-1 Purpose

The purpose of this standard is to provide a quality control standard to ensure that the parts Tachi-s purchases from suppliers meet the specifications requested by Tachi-s.

1-2 Scope

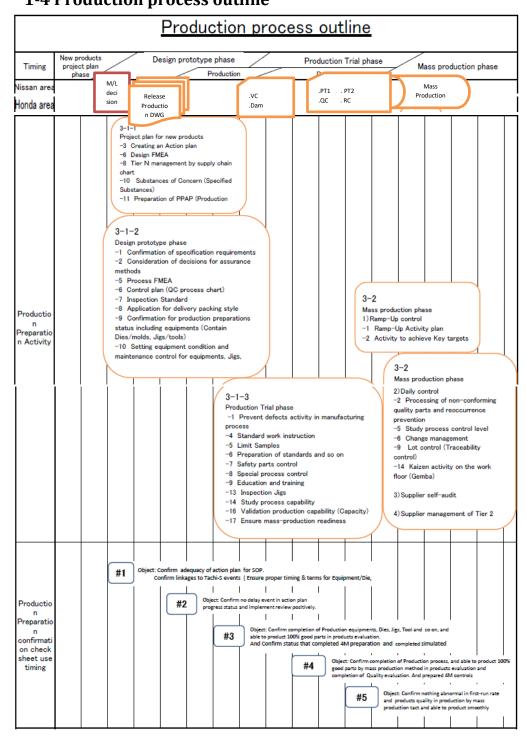
This standard is to be apply to the quality management system that suppliers should establish and to the parts that Tachi-s purchases from suppliers. Regarding supplied parts, the basic purchase agreement must be observed.

1-3 Definition of terms

The definition of terms in this standard is as follows.

Specifications requested by Tachi-S	 (1) Drawings (including CAD data, DXF), specifications, regulations (inspection standard and JIS standards, etc.), standards, and other similar documents that Tachi-S has developed and lent to a supplier. (2) Drawings prepared by a supplier and received by Tachi-S (drawings proposed by a supplier). (3) Other items determined through discussion between Tachi-S and a supplier.
Special	Protect and reduce the damage level of occupants in a collision, and / or ensure
characteristics CC	protection after Shock.
Special	Product characteristics or process control characteristics in which defective
characteristics SC	manufacturing may not cause an accident causing injury or death or a vehicle fire
	but that may have a significant effect on customer satisfaction.
	sc
Special important	A part in which the level of control must be raised to stabilize the applicable
part CC S	quality directly in welding processes.
Supplied parts	Refers to parts that Tachi-S supplies for a supplier to produce a part.







2. Basic concept for quality assurance

2-1 Quality assurance for products purchased by Tachi-S

Upon the purchase of parts, Tachi-S follows the basic principle of purchasing parts from a supplier who is capable of providing a sufficient level of quality assurance. More specifically:

- 1) Tachi-S provides to the supplier the requirements to guarantee the quality assurance for a part that the supplier delivers; and
- 2) Tachi-S checks that a supplier has been consistently providing a sufficient level of quality assurance through inspections, the submission of a monthly score card, and periodical audits.

2-2 Delivered products suppliers Quality assurance

Suppliers shall establish a quality assurance system that meets the requirements below permanently deliver quality-assured parts.

Therefore, when there are any defects, suppliers shall assume the responsibility.

1) Company policy and quality assurance system

Suppliers shall clarify both their company policy for quality assurance and their actual quality assurance system.

The above-mentioned quality assurance system must consider the following points.

(1) Developing a quality system aiming to meet the requirements of the ISO 9001/IATF 16949 standard. As the minimum requirement, the requirements of the ISO 9001/IATF 16949 standard must be understood and integrated into the quality assurance system.

To consult this minimum requirements click: <u>https://www.iatfglobaloversight.org/wp/wp-</u> <u>content/uploads/2016/12/Minimum-Automotive-Quality-Management-</u> <u>System-Requirements-for-Sub-tier-suppliers-2ndEd-rev2.pdf</u>

The related certifications must be sent to the Supplier Account Manager, indicating validity date, update and cancellation.

Goals International Automotive Task Force

 The goals are to develop a Quality Management System as a preventive tool taking actions to minimize risks and maximize improvement opportunities associated to organization context and objectives; emphasizing continuous improvement, ensuring to have **quality management values**, which enable increase customer satisfaction, preventing defects and reducing variation and waste in supply chain.



Quality Management Values:

- a) Customer focus
- b) Leadership
- c) Commitment of people
- d) Process focus
- e) Improvement
- f) Decision making based on evidence
- g) Relationship management

(2) The quality assurance system must be such that the required quality is achieved through adequate activities in design prototyping phase and production trial phase (hereinafter referred to as "quality assurance for new products").

(3) The system must enable the consistent and stable production and delivery of parts that fully meet the specifications that Tachi-s request (hereinafter referred to as "quality assurance in the mass-production phase").

2) The system and document management system

Suppliers shall establish an organization and document management system to fully conduct operations based on the quality assurance system and shall administrate these operations. Suppliers shall submit documents promptly, when Tachi-S requests.

3) Selecting a responsible person for quality assurance

Suppliers shall select a responsible person for quality assurance who manages and supervises the quality assurance activity implementation status.

4) Selecting a person in charge of environment

The suppliers must select a person in charge of the management of the substances of interest and must carry out an adequate management (IMDS), the person in charge must be trained and will be responsible for sending the information required by Tachi-s before the first ones phases VC- Lot, DAN 1, etc. according to each OEM.

2-3 Selection and notification of person responsible for quality assurance

1) Qualifications required for the responsible person for quality assurance and the selection of that person.



Responsible person for quality assurance	Person who is delegated responsible and authority of the coordination regarding quality assurance throughout the whole company (In principle, a director, general manager, or person with an equivalent job position should be selected.)			
Deputy responsible person for quality assurance	Should be selected for each factory or business site as necessary; must be a person who can perform substantive activities regarding to the quality assurance for the parts to be delivered.			
2) Selecting of the main contact person and person responsible for quality assurance at business sites.				
Contact person for quality assurance	Contact person to/from Tachi-S			
Responsible person at business sites	Responsible person for quality assurance at a factory or business site.			
3) Selecting a person in charge of environment.				
Responsible person for environment	Person who can take substantive responsibility in environment-related matters on behalf of the company; Tachi-S must be notified only when this is a person other than the responsible person for quality assurance above.			
	A practical contact person to/from Tachi-S must be			

A practical contact person to/from Tachi-S must be contact person related to the environment other than the contact person related to quality assurance above.

4) Notification to Tachi-S

The responsible person for quality assurance and the contact person related to quality assurance are to notify the respective procurement sections in charge by using the Supplier Contact Directory. Environment and IMDS contact in charge must be included into same document Attached in the annexes PO-Q-8-B-A02.

Supplier Contact Directory shall be updating twice a year and shall be sent in months of May and November; and must be sent to Tachi-s Mexico through the purchasing staff. If before actualization is a major change in main contacts; actualization shall be sent to purchasing area.

Stachis México <u>3. Basic Concepts for Purchasing</u>

3-1 IMMEX Program

Suppliers with the IMMEX Program are required to comply in a timely manner with the following requirements:

- The supplier must provide the IMMEX Program Number to your Business Window.
- As a supplier with IMMEX program, perform the order closures, provide information in the days 1 or 2 of the time marked by the authority for the closing of pediments.
- Provide Certificates of Origin or, where applicable declaration of origin.
- Provide material data sheets as well as their tariff fractions, each time a new part number is generated.
- Provide Foreign Trade Contacts.

3-2 Request for authorization for membership or supplier modification

Purchasing Tachi-s generates the Request for authorization for membership or supplier modification, where you request the general data and documents necessary to generate your file. Attached in the annexes PO-Q-8-B-A02.

3-3 Steel recovery with stampers

The sending of remission covering the steel receipt delivered by the Service Centers at the supplier's premises must be sent via e-mail with legible stamps and signatures within a period of not more than two business days after the receipt of the raw material.

3-4 Compliance with Applicable Standards and Laws.

Suppliers are required to comply with all applicable regulations and laws each time a new business is assigned, or the purchase volume is increased by part numbers carry over.

The supplier must accept and adhere at all times according with the terms and conditions share with all our suppliers.

3-5 Request for Quotation

Upon receipt of an RFQ from Tachi-s it is necessary for suppliers to send the quotes in the official format set out in this Manual. Attached in the annexes PO-Q-8-B-A02.

3-6 Penalty for discrepancy or missing tax documents

The supplier commits to send the information in a timely manner as requested by the company otherwise customer will charge a 35 usd penalty, which must be paid at least 15 days maximum upon notification or purchasing administration will generate a debit note for this amount that will be deducted from supplier's current account.



Tachi-s will submit specific memos to inform, report or confirm important information such as: market conditions, supply risk or natural disaster.

If we don't receive any specific reply from your side, we'll consider that you are agree with the information or that you are not affected by our notice.

4. Minimum requirements to be a supplier of Tachi-s Mexico

The Purchasing area considers approved suppliers, when the supplier meets the following minimum requirements:

- Submit sound financial statements, to confirm that there are no risks in the operation of the company.
- Ensure that it meets the minimum requirements of ISO 9001/ IATF 16949 (current version). The certification requirement of the suppliers is determined, according to the classification thereof, taking the criticality and characteristics of the material they supply.
- That in your QCD evaluation you have reached a grade greater than or equal to 80%.

Purchasing convenes a Committee session, to present candidate suppliers and the option that meets all requirements and standards.

5. Quality Assurance Requirements

Suppliers shall have the responsibility to meet the specifications that Tachi-S requests for all parts that suppliers deliver to Tachi-S. To fulfill this responsibility, suppliers shall deploy and conduct activities for quality assurance based on the previous section, "2. Basic concept for quality assurance."

5-1 Quality assurance for new products

Before the project is assigned to the supplier, a risk evaluation will be performed by Tachis, considering items in <u>Table 2</u>. The bolded items determine automatically a supplier as a "Risk supplier". The result of this evaluation defines if the project will be assigned to the supplier and the type of requirements supplier shall complete during trial and SOP events (ANPQP / APQP).



Table 2. Risk criteria

i.	i. New manufacturing method or technology new facility			
ii.	Important CC, SC and/or LUX characteristics			
	New supplier	For TSM		
		Detail for If Yes	TSJ Experience	
iii.			Other TACHI-S Experience	
iv.	Product Technical Complexity			
V.	Score Card level 3 or 4			
vi.	PPAP: poor performance during development phases and not on-time.			
vii.	C-Speed: answer customer complains >5 days.			
viii.	Recurrence fails.			
ix.	Change management not notified to TSM.			
Х.	Affecting warranty claim			
xi.	IMDS release during development phases and update for design changes, process			
	change, raw material change, legal name change, changes on IMDS platform.			

In case the supplier is new, and has not record with Tachi-s, a QCD audit will be performed for the areas of quality assurance, purchasing and production control (corporate- RHQ).

Regarding the design prototyping phase and production trial phase, suppliers shall <u>establish procedures for implementation related to "quality assurance for new products"</u> covering the following items, and manage based on these procedures, ANPQP or APQP, depending on the customer requirements.

5-1-1 Project plan for new products

-1 Object parts

Newly designed parts and newly ordered parts are to be the objects.

-2 Selection of person responsible for project

Select a person responsible of the project and another for the quality assurance. If the same person will perform both activities, please notice in the "Supplier contact directory".

The responsible person for project plans shall establish an activity organization (cross-functional team) and promote their activities.

-3 Creating an Action plan

<u>Clarify the quality target, the quality evaluation standard, etc.</u>, to be achieved in the design prototyping phase and production trial phase. To achieve these, <u>establish a concrete "Supplier Master Schedule."</u>

According to Tachi-S schedule.

*Attached in the annexes PO-Q-8-B-A02.

"Supplier Master Schedule."



(1) Record-keeping: "Supplier Master Schedule," etc. according to Table 1. Records retention cycles for **"Tachi-S"**.

-4 Progress evaluation of each phase

The responsible person regarding the design prototyping and production trial of new products shall <u>evaluate the activity plan implementation</u> <u>status of each phase and transition period</u> including Tier 2 and subsequent suppliers. And during the evaluation, clarify problems and take measures as necessary.

For the activity evaluation in each phase, use <u>Attached in the annexes PO-</u> <u>Q-8-B-A02 "Production Preparation confirmation check sheet #1-#5."</u>

-5 Defect prevention activity in design stage

Predict potential causes of quality defects in design and investigate how to eliminate them.

For the study, use the following tools and execute the check.

① Design FMEA (Usable FTA)

(2) Past failure (Lessons Learned = Kakotora) checks, etc.

(1) Elimination of difficult operations

With the cooperation of the production division, <u>eliminate difficult</u> <u>operations and improve them</u> not only from the viewpoint of an experienced operator but also <u>from the viewpoint of a less-experienced</u> <u>operator</u>, in order to eliminate quality variations due to difficult operations.

The term "difficult operation" refers to operations requiring high levels of skill (Blind operation, Chafe operation like little adjusting, operations requiring difficult judgments etc.), operations requiring difficult postures, heavy operation and so on.

-6 Design FMEA

A Design FMEA is a tool to aid help design improvement activities in clarifying defects in the design phase, including the design of production methods, and to take measures to prevent defects. This is to reflect the request of customers regarding products in the design prototype phase. It is also important to reflect past problem-solving know-how. For this reason, establish procedures for implementation related to Design FMEA and manage based on the procedures.

(1) Clarification of potential design failure mode

The cross-functional team shall <u>clarify potential design failure modes and</u> <u>the effects of their related causes</u> for new designs, new functions, and new production methods, etc., also by utilizing the Past failure (Lessons Learned = Kakotora).

(Conform to the evaluation standards of the latest AIAG version.)



(2) Problem-solving execution

Analyze the causes (or mechanisms) of potential issues and <u>take effective</u> <u>and appropriate measures</u> from the three angles of design/quality evaluation/process, in order to <u>minimize the possibility of trouble</u> <u>occurrence.</u>

(3) Update of Design FMEA

<u>When a design specification change occurs</u>, due to a design change or problem-solving, <u>review and update the contents of the Design FMEA</u> appropriately depending on the scale of change.

(4) Record-keeping: Records related to "Design FMEA" according to <u>Table</u> <u>1</u>. Records retention cycles for **"Tachi-s"**.

-7 Evaluation by testing

(0) Design review phase

The supplier must perform a Design review concept in early stage to assure that is capable to develop a tool, gauge or product meeting requirements, otherwise must communicate Tachi-s Procurement and Quality Assurance Departments.

(1) Design prototype phase

Check that all of the requested specifications are completely met for the reliability test and store the records of the test plan and results.

(2) Production trial phase

Check that the product produced by the regular production process meets the requested specifications.

(1) Reliability test (flame retardant properties of surface materials/resin, functions, strength, and durability), etc.

(2) Data that Tachi-S and a supplier decide as necessary

(3) Mass production phase

Periodical test data as set in the inspection standard

(4) Record-keeping: "Test Result Data" according to <u>Table 1</u>. Records retention cycles for **"Tachi-S"**.

-8 Tier N management by supply chain chart

To achieve the QCD target for the products to be delivered to Tachi-s and to prevent any quality issues due to a change by a tier N without notice, <u>discern the supply chain structure of the component parts and conduct</u> <u>visualized management.</u> Conduct management so as to be able to make a report when Tachi-S requests with the Component Supply Chain Chart (CSCC).



(1) Items to be managed

① Product configuration (clarifying parts and materials at each level)

(2) Properties of suppliers (supplier name, factory name, location, transaction experience)

(3) Presence or absence of new products

(4) Properties related to production (new properties, such as factories, along with production processes, production methods, technologies)

(5) Presence or absence of development performance (Using performance not included) (parts with achieved results, manufacturer and model, type of vehicle).

*Attached in the annexes PO-Q-8-B-A02.

-9 Confirmation for design prototype preparations status

During the new product quality assurance ramp-up activities, it is indispensable to check the accuracy of the activity plan up to the SOP and to check the preparation status of whether progress is delayed or not, along with other statuses, in order to ensure that the activities are on track.

For this purpose, use the following checklist for checking and evaluating the preparation status in order to execute appropriate correction.

*Attached in the annexes PO-Q-8-B-A02.

"Production Preparation confirmation check sheet (#1, #2)."

-10 Substance of Concern (Specified substances)

Suppliers shall clarify the actions to be taken for regulations (including administrative guidance and industry self-regulation, etc.) related to substances of concern, <u>establish procedures for implementation related to the "management of substances of concern,"</u> manage based on these procedures, and submit the MDS through the online IMDS system (Industria de Asiento Superior SA de CV IMDS inbox: 66908).

(1) Scope

To be applied to all parts and material delivered to our Company, considering the OEM requirements (time, corrections, etc.)

This includes all goods delivered (spot by, protype stage, mass production, etc.) to our company, including components for delivered parts, as well as secondary materials and auxiliary materials for production, such as labels, ink (printing), tape, resin pigment, rubber, banding, and packaging bags. If engineering change (or any other change) is applied, the MDS must be updated and sent again through the IMDS.

(2) Regulations related to substances of concern contained in products Regulations on substances that can affect the environment or human health Example: Regulations on SOCs: Regulations by European ELV Directives/RoHS Directive VOC regulations: Regulations on volatile organic compounds causing air pollution.



(3) Definition of substances (specified substances) subject to regulation Principally, the following are to be targeted: Substances specified to be prohibited or regulated in GADSL, along with Class I Specified Chemical Substances specified in the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Japan) (hereinafter referred to as the "Chemical Substance Control Law"). In addition, the following are to be included: Substances specified in the laws and regulations of each country, and substances specified to be prohibited or regulated upon our request.

Regarding to the details of specified substances, observe the drawings.

Specified substances are classified two types of P: Prohibited substance and D: Declarable substance.

(1) P: Prohibited substance

Substances classified into P must not be contained in parts or materials delivered to our company by an amount exceeding the regulatory level (content rate) except when the exemption clause is to be applied.

(2) D: Declarable substance

Substances classified into D have a high possibility of being classified as P in the near future. Therefore, it is necessary to study alternative technologies.

(4) Items to be executed by suppliers

(1) Add measures for regulations regarding substances of concern in the "Inspection Results Report" and describe the inspection results.

Table 3. Example of a description in the inspection results report.

Measures for	1. Product environmental information (material component) inspection results report	()
regulations on substances	2. Proof of non-inclusion (evidence from vendor by type of goods) (Check an applicable item.)	Judgment
of concern.	[1] Purchased material (table of ingredients/analysis data, others [])	No change
	[2] Purchased secondary material (table of ingredients/analysis data, others [])	
	[3] Purchased part (initial product inspection results, others [])	



Measures when the above methods are not available (number of items :) (actual measurement by the supplier itself, others [])

(2) <u>Attach evidence (chemical substance analysis table or others) for the</u> <u>non-inclusion</u> of substances of concern to be regulated along with the "inspection results report" at the time of the new creation of an applied part, design change, or process change, etc. Note that products supplied by Tachi-S are excluded.

However, if a component analysis table or others are undisclosable due to a reason related to the know-how of a supplier, etc., identify it and attach the certification of the non-inclusion of substances of concern to be regulated.

There is no restriction on the certification format (see <u>Attachment 23</u> & 24).

(5) Definition of terms

- IMDS: International Material Data System
 Internet system used to register information and make reports for the collection and analysis of part/material information in the automotive industry.
- Recommendations IMDS 001 General Structure.
- Directive End of Life of Vehicles 200/53/EC + Annex II.
- GADSL: Global Automotive Declarable Substance List: List of declarable substances and prohibited substances in IMDS.
- REACH (Registration, Evaluation, Authorization and Restriction of Chemicals).
- RoHS (Restriction of Hazardous Substances).
- Conflict Minerals.

-11 Preparation of PPAP (Production Part Approval Process) related documents

<u>Prepare and submit</u> the PPAP documents considering level 3 or the level indicated by SQA members according to AIAG 4.1 Submission levels prior to Production Trial (name depend on Customer, or otherwise SQA agreed) <u>based on the "PPAP correspondence table".</u>

Submit these documents when Tachi-S requests.

*Attached in the annexes PO-Q-8-B-A02.

"PPAP correspondence table."

To meet requirement 17 from PPAP need to be agreed with SQA and/or SQC.

The supplier must assure The Quality Assurance Documents and PSW must be approved before the date that Tachi-s Quality Assurance



Department specified according to the phases project or engineering change. If the supplier doesn't comply with the previous documentation, it will not be able to send material to the Tachi-s plant.

NOTE: PPAP shall be updated considering the requirement of the Manuals PPAP & APQP of the AIAG.

-12 Validation production capability (Capacity)

Suppliers shall examine and confirm on the desk the maximum level of their own production capability (capacity) in the mass production process (main and sub processes).

(1) Validation

Confirm that approximately 100% + /-20% of production is possible when the target production volume per month based on the annual vehicle production volume suggested by customers is regarded as 100%.

Measures for that must be submitted to the Production Control department of Tachi-s.

(Validate resources, shifts, equipment, and overtime hours, etc.)

-13 Control of initial products

Suppliers shall <u>establish procedures for implementation related to the</u> <u>"control of initial products" covering the following items</u> for identification and quality checks of initially delivered products and manage based on the procedures.

(1) Object area

Newly designed parts, newly ordered parts, design-changed parts, process-changed parts, repair parts, and countermeasure parts, etc., are to be the objects.

- (2) Execution of initial product quality checks
- (1) Newly designed parts, newly ordered parts

Check the quality in each phase using the inspection standard established based on drawings, etc., and submit the inspection results report.

(2) Design-changed parts, process-changed parts

Check the quality based on the inspection standard and in relation to changed points and submit the inspection results report.

③ Rework parts, countermeasure parts

Check the quality of rework parts due to specification changes and for parts in which problems have been solved based on the inspection standard and in relation to rework or countermeasures points and submit the inspection results report.

(4) Submission of a sample that has been used for a quality check



When is requested by a Tachi-S SQA and/or SQC, submit the sample (simple part, cut sample, etc.) that has been used for the quality check.

(3) Procedure for initial product delivery to Tachi-S

(1) Submission of an initial product delivery notice

- Submit the initial product delivery notice along with the inspection results report to the SQA contact via the receiving contact, basically at the time of initial product delivery.

* For the preparation of the <u>initial product delivery notice</u>, follow <u>Supplement 6</u>), <u>"Initial products control guidance."</u>

NOTE: Certification per shipment during mass production shall be submitted by e-mail to the SQC and/or attached to the material.

(2) Indication of initial products

- Attach the PPSA to the prototype products and the initial product tag (C8-05-01) for initial mass products.

- The indication of initial products must be made for every delivery location.

(3) Prohibition of mixing new parts and old parts in one package

- The mixture of initially delivered new parts (parts with new specifications or countermeasure parts) and old parts is prohibited even when the old parts are allowed to be delivered.



New parts only Old parts only

Mixture of new parts and old parts

ОК

Prohibited

(4) Record-keeping: "Initial Product Delivery Notice," "Inspection Results Report,"

"Control Book," "PPSA" etc., according to <u>Table 1</u>. Records retention cycles for **"Tachi-S"**.

5-1-2 Design prototype phase

To guaranty the requirements of customers and the requirements shown in drawings in the production process, and to ensure quality, it is necessary to evaluate the equipment, production methods, and methods for quality assurance. It is also important to reflect past problem-solving know-how. For this reason,



establish procedures for implementation related to "process design" and manage based on the procedures.

-1 Confirmation of specification requirements

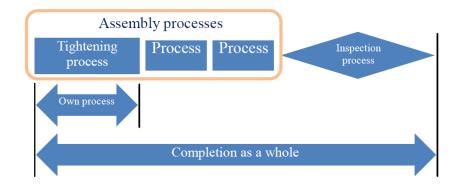
To ensure that the "production process" satisfies the requirements shown in drawings, execute a check using the following tools.

- ①Market research
- (2) Past failure (Lessons Learned = Kakotora) check
- ③Process FMEA, etc.

-2 Consideration of decisions for assurance methods

The company should study <u>the "how" and "where" of ensuring quality</u> <u>based on "own-process completion,"</u> in order to satisfy the quality requirements, production volume, and delivery date, and to reflect these in the QA table, QC process chart, inspection standard, and error-proof system, etc.

The intention of "Own-process completion" is that the operators can <u>easily</u> judge good part condition at the end of operation in own-operations (processes) and never pass (make) defective product.



-3 QA table

QA table is a document used to extract the important points regarding the design quality of a part indicated for Tachi-S requested parts as a predicted failure mode in each process, and to visualize the assurance of "Never make defective product." and "Never pass defective product.". Make QA table and use it as a tool of assurance in the QC process chart and Standard Work Instruction, for the early stabilization of process quality.

-4 Defect prevention activity in process design stage

Study how to predict possible causes of quality defects in the production process and study how to eliminate such causes.

For the study, use the following tools.

1 Process FMEA

2) Past failure (Lessons Learned = Kakotora) check, etc.



(1) Elimination of difficult operations

<u>Eliminate difficult operations and improve them</u> not only from the viewpoint of an experienced operator but also <u>from the viewpoint of a less-experienced operator</u>, in order to eliminate quality variations due to difficult operations.

For hard-operation, <u>refer to Item 5-1-1 -5 "Prevent defects activity in</u> <u>design step."</u> P6.

-5 Process FMEA

A Process FMEA is a tool for process improvement activities to clarify possible defects in the production process and to take measures for preventing their occurrence or being passed through.

In order to surely reflect the requests of customers and the requirements shown in drawings in the production process, and to ensure quality, it is necessary to use the tools of a Process FMEA to prevent the occurrence of possible defects or such being passed through.

It is also important to reflect the past problem-solving know-how. For this reason, <u>establish procedures for implementation related to Process FMEA</u> and manage based on the procedures.

(1) Prevention of defects in the production process

At the time of designing the production process, the <u>cross-functional team</u> shall take measures to <u>prevent the occurrence of possible quality</u> <u>problems</u> in each operation process by utilizing past troubles, etc. <u>Reflect</u> those measures <u>in the control plan</u>, work instruction, and other related forms.

(2) Error-proof

Take mechanical countermeasures such as the use of an error-proof, if the Risk Priority Number (RPN) is high.

If the detection level is high, countermeasures must also be taken for the controls implemented to be effective.

(Do this in conformance with the evaluation standards of the AIAG, latest version.)

RPN: Abbreviation of Risk Priority Number, RPN = Severity (S) x Occurrence frequency (O) x Detection rate (D)

For AIAG, refer to 5-1-2 "Design prototype phase," Item -2 "Design FMEA."

(3) Update of Process FMEA

When a process change occurs due to a design change or due to problemsolving, review and update the contents of a Process FMEA appropriately depending on the scale of change.



The FMEA must be reviewed at least once a year, additionally it should be reviewed every time there is an engineering change, customer complaints, etc.

(4) Record-keeping: Records related to "Process FMEA" according to <u>Table</u> <u>1.</u> Records retention cycles for **"Tachi-S".**

-6 Control Plan

In order to surely realize the requests of customers and the requirements shown in drawings in the production process, and to ensure quality, it is important to completely reflect product characteristics and process control characteristics in the control plan.

For this reason, <u>establish procedures for implementation related to the</u> <u>"control plan"</u> and manage based on the procedures.

The control plan is a document that describes all of the production/process control methods to be implemented throughout the production processes, from the parts receiving to the product shipment, and it <u>clarifies requirements for the high quality product</u>. The control plan is to be submitted to Tachi-S.

(1) The control plan includes the following items.

① Process number, process name, equipment name, jig name

(2) Appropriate control methods and check frequency for product characteristics (all of the special characteristics and main characteristics) based on drawings

(3) Appropriate control methods, check frequency, and display of special characteristics marks for process control characteristics

(4) Clarification of specifications, tolerance, and measurement methods

(5) Match of processes related to receiving, production, inspection, and shipment shown in the process flow chart

(6) Check of the accuracy of all measurement devices and a check of the functions of monitoring devices and error-proof systems

(7) Handling and countermeasures in case of abnormality

(2) Consistency in forms

Use the same process numbers for all of the related forms (example: control plan, process flow chart, work instruction, and Process FMEA, etc.)

(3) Record-keeping: "Control Plan" according to <u>Table 1. Records</u> retention <u>cycles</u> for **"Tachi-S"**.

-7 Inspection Standard

In the inspection standard, assurance details are clarified based on the instructions shown in drawings, and the inspection standard is to be submitted to Tachi-S by part.



(1) Items of the inspection standard

(1) Inspection items, importance, inspection frequency (100% sampling), inspection methods, judgment criteria, and items to be periodically inspected or tested (frequency), etc.

Supplier at least once a year a full report must be delivered for each part number supplied.

(2) For items for which sensory evaluation is needed, for example, color or grain; and the standard sample and limit sample are to be set.

(2) Record-keeping: "Inspection Standard" according to <u>Table 1.</u> Records retention cycles for **"Tachi-S"**.

③A quality certificate is received for all parts by the supplier per batch, where the quality of the product shipped is guaranteed.

-8 Application for delivery packing style

Suppliers shall study the Packaging Data Specifications (PDS) to ensure quality maintenance (no quality degradation) or require Tachi-s Production Control the Packaging Data Specifications (PDS) to Tachi-S and shall also be careful in handling. Tachi-S must approve by related departments as Quality Control, Production Control and Engineering). If during SOP is necessary, review it should be negotiated between both parties, (supplier and Tachi-s), depends on part number apply.

(1) Items to be described

Supplier code, name of department in charge, company or factory name, contact information, model name, container name, hand held container (HHC), length (L), width (W), height (H), SNP, gross weight including package (kg), part number, part name, weight of single part (g), RFQ or Volume in units, Pieces per car (usage) deliverable date, and others Also, study measures for securing safety and preventing damage/dirt.

(2) Approval Packaging Data Specification

The Tachi-S administration section shall consult with the quality control section and related sections and ensure that no problem exists. Then, the Tachi-S administration manager shall examine the delivery packing style, and the QC Manager shall approve it.

*Attached in the annexes PO-Q-8-B-A02.

The retention of this record will be the duration of the project. For service parts and EOP, packing style must accomplish with approved Packing Style; if variations are needed, those must have an agreement with Tachis Production Control.

SNP at End of Production shall be adaptable as a customer specific requirement.



-9 Confirmation for production preparations status including equipment (Contain Dies/molds, Jigs/tools)

To proceed with production preparation activities in accordance with the plan, establish procedures for implementation related to "production preparation progress management," covering the following progress checks in each phase, and manage based on the procedures.

* Definition of term

- Equipment: Main production equipment's like machine processing, welding, press, plastic mold etc., and included inspection equipment. (Dedicated, General-purpose)

- Dies/molds: Inclusive term die/mold for processing products. (Press, hammering, plastic, forming and so on)

- Jigs: Units for using fixing, positioning, control and guidance of cutting tool, Inspection Jigs, etc.

- Tools: Tools type of using for attachment, taking off, separating of Jigs & machines parts fastening and so on.

(1) Understand the production preparation status

Set a target to be attained for each phase based on the production preparation activity plan of the "new product quality assurance activity plan" and execute the evaluation of the progress status and take follow-up measures by using the following tools. Before starting mass production activity, make a judgment for transferring to mass production.

*Attached in the annexes PO-Q-8-B-A02.

<u>"Production Preparation progress confirmation plan" – evaluate</u> achievement for main items

*Attached in the annexes PO-Q-8-B-A02.

<u>"Production Preparation confirmation check sheet (#3, #4, #5)" –</u> <u>evaluation of overall progress</u>

> Design prototype phase: #3 Prototype production phase: #4, #5

(2) Receiving audits

Cooperate when Tachi-S executes a check of the production preparation status and a follow-up in each phase.

(3) Timing

For each phase (timing), refer to Item 1-4 "Production process outline."

(4) Record-keeping: "Production Preparation progress confirm plan," "Production Preparation confirm check sheet," etc., according to <u>Table 1</u>. Records retention cycles for **"Tachi-S".**



<u>-</u>10 Setting equipment condition and maintenance control for equipment, Jigs, Tools

To ensure that the functions of the equipment, jigs and tools work effectively, establish procedures for implementation related to the "control of equipment, jigs, and tools," covering the following condition settings and control, and manage based on the procedures.

(1) Establishment of a condition table

When the control of equipment conditions including the conditions of welding, foaming, molding, heat treatment, and surface treatment, etc., significantly impact to quality, <u>establish a condition table as optimum conditions</u>.

(2) Management of equipment, jigs, and tools

In order to ensure that jigs and tools play their roles effectively, set appropriately the clamping method and dimension of locating pins, etc., to prevent negative effects such as abrasion.

(3) Filling out of forms and the keeping of records

Before starting production, check that equipment, jigs, and tools are proper condition by using the condition checklist and daily check sheet, etc., and record them.

(4) Training

Perform the training necessary for proper maintenance control, considering safety and ergonomic installations for all operators.

(5) Record-keeping: "Equipment Condition Checklist," "Daily Check sheet," etc., according to <u>Table 1</u>. Records retention cycles for "Tachi-s".

-11 Inspection Jigs

Inspection jigs are measurement devices used to judge whether parts meet the drawings and inspection standard. Therefore, suppliers shall design measurement devices as part of their responsibility.

* Attached in the annexes PO-Q-8-B-A02.

Gauge specification and approval sheet

(1) The required values shown in drawings must be met. Make sure of these when designing measurement devices.

(2) Verify the accuracy of inspection jigs and record them as inspection results reports and keep photocopies of the reports with the inspection jigs as a set.



(3) Manage inspection jigs using daily check sheets even **the jigs are not used daily.**

-12 Environment control in inspection area

During inspections, <u>secure appropriate lighting and take measures for</u> <u>preventing surrounding noise</u> so that sensory inspections are not inhibited.

(1) Lighting

Secure a level of lighting that enables the detection of defects without fail. 800 lux or more is desirable. Measure and record the lighting level regularly to maintain the appropriate lighting and keep them.

(2) Sound

Secure an environment that enables the detection of abnormal noise without fail. For this purpose, secure an environment where no negative effect on sensory inspection judgment is present. Negative effects include the operating noise of nearby equipment and assembly operation noise, etc.

(3) Ergonomic facilities

It must have as a purpose the adaptation of the facilities, machines and work tools to the anatomy of the people who work in their companies within the inspection areas that allow them to perform an easy, efficient and safe analysis of the processes and products according with the specifications.

*Take care regulations for workers safety.

-13 Substance of Concern (Specified substances)

* Refer to 5-1-1 "Project plan for new products," Item -10.

-14 Unify management of issues & countermeasures in prototype <u>Conduct unified management by using a "quality stabilization control</u> <u>chart</u>" so that neither incomplete nor the missing of defect-corrective actions in the production trial phase. The cross-functional team shall direct activities regarding measures to be taken.

(1) Management using a "quality stabilization control chart"
Conduct unified management by using a "quality stabilization control chart" for taking secure measures.
<u>*Attached in the annexes PO-Q-8-B-A02.</u>
<u>"Project Development Record."</u>



(2) Record-keeping: "Project Development Record" according to <u>Table 1.</u> Records retention cycles for **"Tachi-S".**

5-1-3 Production Trial phase

In order to surely meet the requests of customers and the requirements shown in drawings in the production process, as well as to ensure quality, it is necessary to sufficiently study equipment, production methods, and methods for ensuring quality in the production process (mass production process) and present to Tachi-s through a periodical progress meeting, lead by the supplier (review with SQA contact).

For this reason, <u>establish procedures for implementation related to "production</u> <u>preparation"</u> and manage based on the procedures.

-1 Defect Prevention activities in manufacturing process

Study the prediction of the possible causes of quality defects in the production process, along with how to eliminate them.

(1) Check items of the production process

Check difficult operations in the production process and check the possibility of Past failure (Lessons Learned = Kakotora) on site.

(1) Check that no difficult operation exists in the process.

(2) Check that systems are in place to prevent assembly mistakes or missing parts in the process.

③ Execute a check based on the Past failure cases (Lessons Learned = Kakotora).

(2) After the check, reflect the changed or revised contents into the control plan, standard work instruction, and other documents.

-2 Control plan

* Refer to 3-1-2 "Design prototype phase," Item -6.

-3 Inspection Standard

* Refer to 3-1-2 "Design prototype phase," Item -7.

-4 Standard work instruction

It is important to clearly define the following by using photographs and illustrations for easy understanding based on the request of customers, the control plan, and the operation requirements table. The job procedure, standard stock amount, key points in operation, equipment, jigs and tools, quality characteristics, parts to be used, operation time judgment criteria, and influence rate, etc., in each production process are to be defined. For this reason, <u>establish procedures for implementation related to the "standard work instruction"</u> and manage based on the procedures. The standard work instruction is to be used for the check, and everyone should be able to perform the same operation and observe the job



procedure through the education/skill training for new operators and through operation observation.

(1) Consistency in forms

Use the same process numbers, symbols, and terminology, etc., for all of the related forms (example: control plans, process flow charts, and inspection standards, etc.).

(2) Record-keeping: "Standard work instruction" according to <u>Table 1</u>. Records retention cycles for **"Tachi-S".**

-5 Limit Samples

For appearance/sensory limit samples, actual samples or photographs are to be used for quality-level definition; as there is no other appropriate method for this.

(Example: Scratches, color, winkles, grain, gloss, and shape, etc.)

(1) Indication on limit samples

- 1.- Limit sample creation date
- 2.- Allowed limit level
- 3.- Type of vehicle and part name
- 4.- Effective period
- 5.- Signature by customer

(2) Agreement on limit samples

The responsible person shall sign each limit sample and make an agreement with us (Tachi-S) or the OEM.

(3) Prepare a Control Book and use it for management.

-6 Preparation of standards

Suppliers shall <u>establish procedures for implementation related to the</u> <u>"preparation of standards"</u> and manage based on the procedures, in order to prepare and streamline the standards necessary for continuous production and shipment of products that satisfy the requirements in properly managed processes.

(1) Main forms related to standards: To be made for each part and each process in the production trial phase, all parts to be targeted.

- 1 Inspection standard
- (2) Control plan
- ③ Standard work instruction (manual)
- (4) Inspection criteria
- (5) Limit sample
- (6) Daily check sheet, etc.



(2) Consistency in standards Ensure consistency in standards (1), (2), and (3).

(3) Observation of standards

Thoroughly inform (educate) the operation details of the abovementioned standards for the standards to be observed.

Provide training for operators and operation observation, and record this.

(4) Management of standards

Assign a responsible department for the creation, verification, and management of the standards, respectively.

The department responsible for management shall manage the condition of preparation and the streamlining of standards (revision or retirement, lack of equipment, etc.).

(5) Procedure for Tachi-S

(1) Submit the inspection standard and control plan for safety parts, important parts, and parts that the QC Manager specifies to the QC Manager via the procurement department in charge no later than one week before the delivery of a production prototype.

* Refer to Supplement 2), "Guideline on Creating a QC Process Table"

* Refer to Supplement 3), "Guideline on Creating an Inspection Standard"

-7 Safety parts control

In order to ensure the quality of safety parts and manage the process control characteristics and product characteristics, suppliers shall establish procedures for implementation related to "safety parts controls" and manage based on the procedures.

(1) Indication of identification marks of safety parts

<u>Display the identification mark of "safety parts"</u> on necessary standards and forms.

For identification on delivery packing, put the identification mark on the "delivered part lot card" (only when a lot card is attached) or delivery packing label, and indicate it on the container, such as the pallet or returnable box.

* For the identification mark of a "safety part," <u>refer to Item 1-3 "Definition</u> <u>of terms."</u>

(2) Execution of lot control

Assign a lot number and indicate it on the product itself.

For details, follow <u>5-1-3 "Production trial phase,"</u> Item -12 "Lot control Management," and Supplement 7), <u>"Guidance on Assigning a Lot Number."</u> If supplier use a different system to assign lot number to material, is needed that it accomplish with traceability needs specified in 5-1-2 "Prototype production phase" Item -12 "Lot control Management".



(3) Securing and maintaining process capability

Concerning process capability index and process rejection rate, the following process control level or higher must be attained.

Process capability index: Cpk ≥ 1.33 or 1.67 (depends of the OEM) * For New Projects this data should be delivered before off process revision (PT2 for Nissan; Dan 2 for Honda, PP for Aki Seat and HVPT for Toyota).

Process rejection rate: P < 0.01%

* Note that all products delivered to Tachi-S must be free of defects.

(4) Operator education

For operation processes that handle safety parts, assign operators who have completed education based on the internal rules.

Particularly, <u>for processes with safety characteristics, assign designated</u> <u>operators.</u> For this operator, is necessary to have evidence of education and/or certification given; and have a special identification to distinguish from other operators.

(5) Handling of reworked parts

When parts have been rework, designated operators must perform the reworking operation. The designated operators shall conduct the inspection of the safety and significance characteristics of reworked parts and shall undergo an inspection by a third party as well. In addition, use an indication for the reworked part on the part itself and keep records of rework, for the identification of reworked parts.

(6) Execution of self-audits

The responsible person for conducting the audit prescribed in Item 3) of 3-2 shall conduct an audit of the management implementation status of relevant parts once or more a year, in principle.

(7) Record-keeping: "Lot Control Book," "Record of Inspection/Test Result," and "Quality Defect History," etc., related to safety parts according to <u>Table 1</u>. Records retention cycles for **"Tachi-s"**.

-8 Special process control

In order to consistently administrate the stable management of special processes where inspection is difficult through general inspections or tests, suppliers shall establish procedures for implementation related to "special process control" and manage based on the procedures.



	Target process	Welding
р		Following metallic treatment: Melt welding, electric resistance welding, brazing, soldering
		Tightening
		Bolt/nut tightening (specified portion)
		Heat treatment
		Following metallic treatment:
		Hardening, tempering, carburizing & quenching, carburizing & tempering, normalizing, annealing, high-frequency hardening, high-frequency tempering, nitriding, soft nitriding, flame hardening, flame tempering
		Surface treatment
		Following metallic treatment: Electroplating
		Riveting treatment
		Following metallic treatment: Spin riveting, press riveting
		Sewing
		Specified portions of the trim cover (Reinforce close, etc.)
Inspect and		Execute the inspection of control characteristics for each lot and record the results.
reco	recording	As for heat-treated parts, execute the testing for hardness for each heat treatment lot and record the results.
		* If those inspections are not executed, clarify the reason for assurance.
Obs	ervation	Establish an operation standard for special processes and enforce it.
		* Also enforce the management items for daily checks.
Rec	ording	For processes that can cause significant influence on quality, define the optimum conditions and record the results.
* The	e above pro	cesses must be performed by designated operators.

-9 Education and training

In order for a manager/supervisor to give education and training to operators (included inspectors) based on the standard work instruction and manual, etc., suppliers shall <u>establish procedures</u>



<u>for implementation related to "education and training,"</u> and manage based on the procedures.

(1) Operator education

1 Planning for the education/training of operators

(2) Creating and preparing educational materials

(3) Basic education for new operators/helpers and operators after an absence (of one month or longer)

(4) Education on actual operations (standard work instruction) and operation observation

To be continued until operators acquire enough skill

(Evaluate operators by I=>L=>U level and educate them until they stably attain level L [at which an operator can perform operation without the help of others] or higher. If supplier use a different system to evaluate operator's skills and it meets this manual requirement, it can be used to cover this point.)

(5) Education for the handling of abnormality

6 Recognition of qualifications

(7) Education records

(2) Thorough education on change management

Also, in the case of a change in operation associated with a design change or process change, be sure to give education on the change, and assess the skill of operators and assign appropriate operators to actual operations.

(3) Record-keeping: Records of the "Education/Training Plan" and "Skill Evaluation Table," etc., according to <u>Table 1.</u> Records retention cycles for **"Tachi-s".**

-10 Management of measuring equipment accuracy

Suppliers shall manage the accuracy of measurement equipment to evaluate whether parts meet the drawings and inspection standards, along with whether they meet the requirements on process management, quality improvement, or other quality matters.

For this purpose, establish procedures for implementation related to "measurement equipment accuracy management" and manage based on the procedures.

(1) Measurement equipment (measurement equipment that has influence on the product adequacy assessment)

(1) Measurement devices (caliper gauge, height gauge, angle gauge, and push-pull gauge, etc.)

(2) Monitoring equipment (equipment for monitoring and detecting proper or incorrect operations, etc.)



(3) Standard instruments (weight, block gauge, and standard solution, etc.).

(2) Check/inspection work

(1) Daily check: Check before starting operation (appearance, function, etc.).

(2) Periodical check/inspection: Check/inspection to be executed periodically (appearance, function)

(3) Calibration: Calibration of measurement equipment by using a standard instrument or other devices.

(3) Certificate of calibration

Prepare the following <u>three items: Certificate of Calibration, Inspection</u> <u>Results Report, and Traceability System.</u>

The equipment must have a system Traceability and the laboratory where calibrations / verifications are carried out must be certified according to ISO/ IEC 17025 or equivalent.

(4) Record-keeping: "Records Related to Measurement Equipment" according to <u>Table 1</u>. Records retention cycles for **"Tachi-s".**

-11 Measurement System Analysis (MSA)

Suppliers shall execute the evaluation and verification of repeatability and reproducibility, in order to secure measurement accuracy. For this reason, establish procedures for implementation related to "measurement system analysis" and manage based on the procedures.

Guideline To be based on "AIAG MSA Study Guide, Last Edition"

The evaluation points are "repeatability" and "reproducibility." To be based on the analysis procedure and assessment criteria of "Average & Range Method"

Preparation ① Preparation of MSA analysis (data sheet)

Refer to the separate sheet of the supplement for "Measurement System Analysis," along with entry examples.

(2) Preparation of the MSA analysis report

Refer to the separate sheet of the supplement for "Measurement System Analysis," along with entry examples.

Gauge R&R assessment



Assessment criteria	%GRR	10% or less	Accepted
		Over 10% to 30%	Conditionally accepted (accepted if the approval of the customer is obtained regarding significance, gauge cost, and repair cost, etc.)
		More than 30%	Measurement system needs to be improved
Improvement	As a resul	t, if assessed a	as "no good":
-		oit the use of t ed and assess	he relevant measurement system until it ed as OK.
		ne separate sh	analysis result, the QC Manager should eet of the supplement for "Measurement
-12 Lot	t control (Traceability	control)

Suppliers shall figure out the production history and <u>completely</u> <u>execute "first in first out" according to production dates</u> for the purpose of minimizing the target range in case of trouble occurrence. FIFO system will be applied.

Also, in order to speed up the investigation of the cause in case of trouble occurrence, <u>establish procedures for implementation</u> related to "lot control" and manage based on the procedures.

(1) Object parts

In principle, execute lot control for parts to be delivered to Tachi-S.

(1) Safety parts and parts specified in drawings: Lot control must be executed.

(2) Other parts: Follow the direction of the Tachi-S QC Manager.

(2) Indication of lot number

Assign a lot number for easy search and tracking of part history.

(1) Indication on the product itself (finished products): In principle, indicate the lot number on the product itself (finished products). The indication must be made by a method difficult to be erased, such as marking or printing, etc.

(2) Indication on the delivery packing label: In principle, indicate the lot number on the delivery packing label.

(3) Record of lot control



Suppliers shall prepare and store a "Lot Control Book" to speed up the search and tracking of part history where necessary.

(1) In the Lot Control Book, enter the following by part: Receipt date, lot number, model number, manufacturing date, inspection date, shipment date, and quantity, etc.

(4) Search for target lot

With regard to safety parts and parts directed by the Tachi-S QC Manager, conduct management so that <u>the target lot can be found</u> within approx. two hours after being directed by Tachi-s.

(5) Method of lot control

(1) Lot control: Method of assigning the same lot number to a group of products for management

(2) Individual management: Method of assigning a specific number to a single product for management

(6) Lot unit

Depending on the characteristics of the part, configure a lot for the respective important processes throughout the entire processes, including material procurement, processing, assembly and shipment, and manage it.

Set a lot size in a manageable range. In principle, set production per day as one lot.

(7) Traceability control

For easy tracking and to minimize the target range for trouble occurrence, establish a system to execute "first in first out" according to production date for all of the processes, including deposits.

(8) Procedure for Tachi-S

Before the delivery of safety parts or parts directed by the Tachi-S QC Manager, suppliers shall submit the "delivery packing style" and "lot number definition" to the Tachi-S QC Manager.

(9) Record-keeping: "Lot Control Book," etc., according to Table 1. Records retention cycles for **"Tachi-S"**.

-13 Inspection Jigs

* <u>Refer to 3-1-2 "Design prototype phase," Item -11.</u>

-14 Study process capability

Process capability refers to the capability of the process to produce conforming parts, including variation, in a stable manner.



(1) Purpose

The purpose of the process capability study is to check the process capability.

As needed make a process capability study plan and execute the process capability study.

(1)	Safety	characteristics/important	and	Process	capability
	function characteristics			index: Cpl	x ≥ 1.33
(2)	General	characteristics		Process	capability

ral characteristics Process capability index: Cpk ≥ 1.00

*In some cases, Cpk depend from OEM requirement.

Form for reference: Process capability study result report

(2) Timing of the process capability study and submission Check that <u>all process capability indexes are met one and half months</u> <u>before the production transferring judgment meeting at Tachi-S</u>. To do this, study the process capability immediately after the production tools and production process are prepared, and improve the process as necessary.

Submit the process capability study result when Tachi-S requests.

(3) Record-keeping: "Process capability study result report" according to <u>Table 1. Records retention cycles</u> for **"Tachi-S".**

-15 Environment control in inspection area

* Refer to 5-1-2 "Design prototype phase," Item -12.

-16 Validation production capability (Capacity)

* Refer to 5-1-1 "Project plan for new products," Item -12.

-17 Ensure mass-production readiness

Suppliers shall be <u>responsible for ensuring a certain level of mass</u> <u>production (productivity, quality)</u> in the prototype production phase.

Verify that the productivity and quality can be attained in the mass production allowed time.

If the productivity and quality cannot be attained, <u>eliminate bottleneck</u> <u>operation processes and problems, take measures, and confirm that the measures have been completed.</u>

Submit records when Tachi-S requests.

(Guideline: Approximately one-hour or 30-unit continuous production in the mass production allowed time.)

(1) Timing of implementation



The above-mentioned action <u>must be completed one and half months</u> before the production transferring judgment meeting at Tachi-S, at the latest.

(2) Condition for implementation

The above-mentioned action must be implemented under the final conditions of the 4Ms ("man," "material," "machine," "method"). All of the processes (including material supply, etc.) must be covered.

(Receiving=> Material supply => (Change Over) => Assembly => Inspection => Shipment)

(3) Preparation details

(1) All of the operators involved with production must be welleducated and have acquired the necessary skill.

(2) All of the manufacturing/inspection instruments and devices must be maintained and calibrated.

(3) All of the forms for processes must be prepared (proper product design level) and kept in appropriate locations.

(4) Check items

- (1) Cycle time for all processes
- (2) Detection of bottleneck processes
- ③ First-run rate, OK rate, etc.
- (4) Die tooling change and set-up time

(5) Organization of problems and improvement

According to the result of checks for "ensuring of a certain level of mass production," take measures for the improvement of all of the problems to be improved.

-18 Equipment condition control

* Refer to 5-1-2 "Design prototype phase," Item -10.

-19 Confirmation for production preparations status including equipment

(Contain Dies/molds, Jigs/tools)

* Refer to 5-1-2 "Design prototype phase," Item -9.

-20 Evaluation by tests

* Refer to 5-1-1 "Project plan for new products," Item -7.

-21 Equipment Control

In order to meet the requests of customers and requirements shown in drawings and to assure quality in the production process, it is necessary



not only to determine the appropriate equipment specifications but also to <u>conduct management appropriately</u>. For this reason, <u>establish</u> <u>procedures for implementation related to "equipment control"</u> and manage based on the procedures.

(1) Process preparation phase

Prepare and fill out the "equipment daily check sheet" or others for each piece of production equipment and manage the list.

The target production equipment is the following: Welding equipment, molding equipment, press equipment, painting equipment, tightening equipment, assembly equipment, and inspection equipment, etc.

(2) Daily control in the mass production phase

(1) Figure out the management status of the above-mentioned equipment and continuously check that they are in good condition.

(2) Devise a periodic maintenance plan and execute it.

(2) In case of abnormality, take measures promptly and ensure recovery.

(3) Be sure to have a proper reserve of replacement parts for maintenance and repair and keep records.

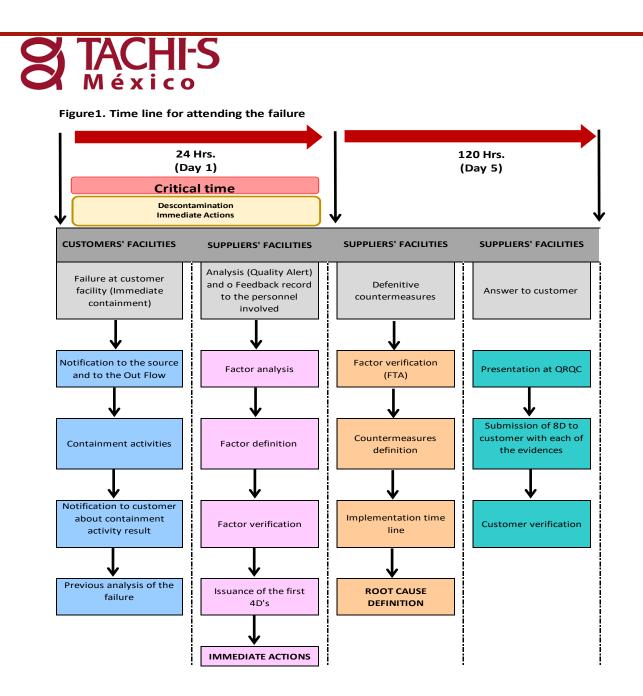
-22 Processing non-conforming quality parts and reoccurrence prevention

If the supplier finds a quality defect in delivery parts to Tachi-S <u>or the</u> <u>occurrence of a quality defect that could have been passed through to</u> <u>Tachi-S</u>, it is indispensable to figure out the accurate situation and to take appropriate measures promptly (including improvements). For this purpose, <u>establish procedures for implementation related to "handling of</u> <u>quality-non-conforming parts and reoccurrence prevention,"</u> and manage based on the procedures.

In case Tachi-s finds out defective parts in its plants or at customer facilities, a Notification of failure will be sent to the supplier (a sample of the failed part(s) will be provided whenever is available).

After receiving the notification of failure, supplier shall proceed as indicated in <u>Figure 1</u>, following SQC/SQA instructions (except by prototype products, which require immediate support).

Figure 1. Time line for attending the failure



Once the supplier receives the urgent failure notice, supplier has one day calendar to send the immediate actions and at the same time supplier has 5 days to send the definitive actions, it has three business days to sign for acceptance and send to Tachi-S quality area, at the same time supplier has 5 business day for inspection (sorting) 100% of the material to determinate quantity OK or NG.

Tachi-s according to the quantities of NG detected in the inspection, immediately prepares and issues a rejected material sheet, the signature and acceptance of this must be immediate once the supplier receives it and must determine the provision of this and / or the return form.



Provision material: Scrap Subset Scrap in TSM

Return to supplier floor: TSM route Supplier path Extraordinary freight

Once the Urgent Failure Notification is sent to the supplier, Tachi-S safeguard the material for a period of no more than 19 days. If the supplier does not remove the material from Tachi-S facility, We will not be responsible for any damage.

NOTE: Tachi-s reserves the right to initiate sort, scrap, rework or repair activities without prior authorization from the Supplier to protect production build.

The supplier must pay the sorter for inspection, repair and / or rework that Tachi-S assigns, as well as the expenses of the services and the use of the area if the system is within the Tachi-S facilities.

The following are required to be met by the contracting company that assigns Tachi-S for Inspection, repair and/ or rework:

General requirements:

- Bring your own tooling for the assigned activity.
- Bring your own PPE complete and in good condition.
- Personnel insurance sheets updated and in order.
- Properly filling out attendance records.
- Reports delivered of reworked material (daily while the service is being performed).
- Development of standard work instructions (HMTE).
- Staff availability and care for 24/7.
- Response time to reported faults containment of 2 hrs. at a minimum.
- Ensure that the correct draw of the material will be made with the personnel that comes.
- Have a Supervisor in charge of reviewing staff activities and performance, as well as informing the Plant Manager about the status of services.
- Service warranty, "0" incidents reported per customer.
- Comply with the Safety, Hygiene and Quality Standards of the plant where the service is performed.
- Meet set schedules.
- Maintain order and cleanliness in the service area.



Note: When a supplier passes rigorous inspection, they take charge of lot inspection or send a sorter.

Quality requirements:

- Standard Method Worksheet issuance validated by supplier and/or TSM within 24 hrs of opening the draw.
- In case of leakage by guaranteed material, inspected, reworked the service provider must be responsible and deliver clean point, otherwise the charge made by a second supplier guaranteeing us said material will be deducted.
- If the required rework is not delivered in a timely manner, a penalty of 5% of the total value of each invoice issued corresponding to the rework that is executed will apply.

Cost requirements:

- Submit your proposal in Mexican pesos.
- The cost must include the labor, transfer and supplies needed to perform the service.
- Cost Break down by regular day from Monday to Saturday, costs on Sundays, holidays and overtime.
- When the service requires special supplies will be quoted separately.
- Payments will be made via electronic transfer, to the account that the vendor indicates.

Services requirements:

- Daily delivery of the report at the close of the shift.
- Attention to the indications of the plant requesting the service.
- Weekly delivery of report with your respective invoice sent with the window of each floor for your Authorization.
- The Sorting staff shall not operate vehicles or machinery owned by the "Customer", except where there is a written request from the latter.
- In case of requiring any Tachi-s tools to have control and supervision of the good condition of the tool used in the services.
- The service supervisor must confirm their entire workforce on a daily basis if this is not, immediately implementing a contingency plan for unscheduled fouls.

Note: When Tachi-S places a sorter within its facilities as a result of NG material from suppliers, all expenses incurred will be borne by the supplier even if they have not been authorized by the supplier.

NON-NEGOTIABLE / NO EXPENSES WILL BE OPENED TO THE SUPPLIER.



A penalty will be issued by Tachi-s based on the amounts (See table 1.1) for each quality rejection sheet and all expenses incurred by Tachi-s (See table 1.2). Also, if the rejection affects the client, these will be PASS THROUGH, and will be including corresponding penalty (See table 1.1).

Table 1.1

MATERIAL COST (MXN)	
\$ 300,000	150 USD
\$ 600,000	200 USD
FROM \$ 600,001 AND UP	
Reincidence (penalty x2)	
Customer complaint (penalty x4)	
	\$ 300,000 \$ 600,000 AND UP nalty x2)

Following you can see some of the expenses. These are declarative, but not limiting.

EVENT / COST TYPE	UNIT COST STANDARD
Operating costs of protective	Real cost for TSM
measures: sorting, destruction of parts	
Costs incurred in the downstream	Based on real costs (PASS THROUGH)
operation stage of Third Party claims	
Rejects of complement and / or	Real cost for TSM
semifinished products	
Machine downtime	Standard machine rate
Transportation costs	Real cost for TSM
Claims charged by the CUSTUMER	Based on real costs (PASS THROUGH)
	+ 600 usd handing charge
Costs of an expert	Based on real costs (PASS THROUGH)
	+ 150 usd handing charge

Table 1.2

T.C. 20.15 mxn = 1 usd

All expenses included will be charged to the supplier, and it will not be negotiable, details of this information TSM will share according to its internal policies. The penalty rate is for each AFU and / quality sheet detected and issued by the quality area without exception.

For each extra time or line stoppage, we consider following process: Inspection area, Assy, Frame, Cutting & sewing, Pad, Wading and Injection.

In case of Directed suppliers, the cost per minute will be determined by the costs established in the customer's Quality Manual.



If an overtime or line stoppage is generated by any supplier condition, Tachi-s will charge not just the real cost of the overtime/line stoppage and also a penalty defined in Table 1.1

At the time of any of the above notices, the supplier must sign within the first 5 business days, if not done in time, acceptance will be taken for granted and the flow will continue.

All existing debt will be eliminated only until it is paid, the time elapsed between the notification of collection to the supplier and the event that occurred, will not be more than 6^{th} mohts.

Remarks: In case of having a client claim, the supplier will be responsible for covering the expenses generated to Tachi-S, as well as covering the fine or penalty issued by the client.

If additional time is required for the Supplier to appeal for charges, the supplier shall submit a written communication to request more time or a meeting.

In case of any quality problem in the products delivered to Tachi-S, customer and/or end user, the supplier is responsible for covering all the expenses that are generated from it.

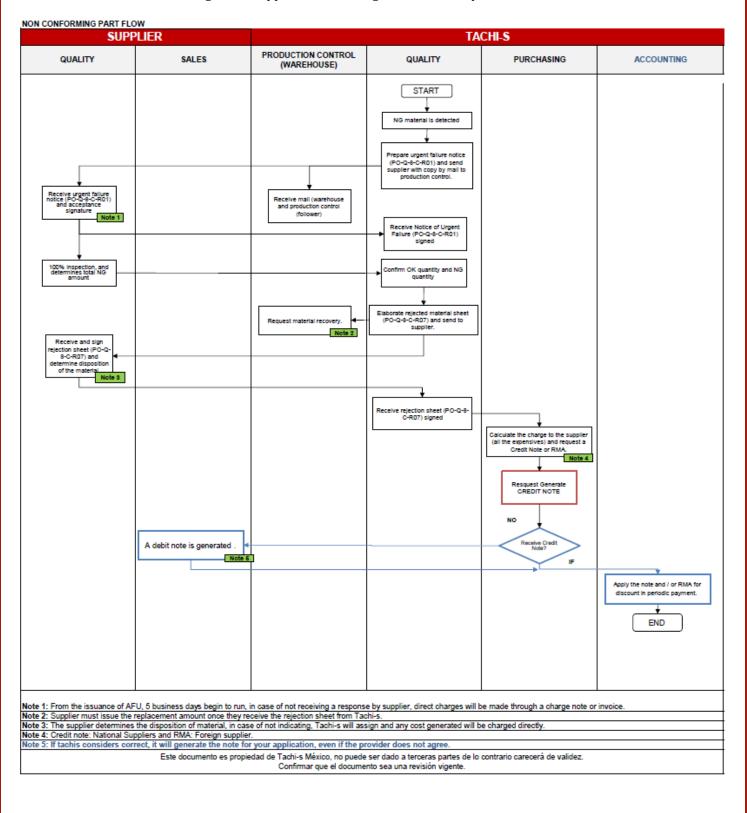
In a period of more than 19 days, Tachi-s will not be responsible for the state of the NG material. Any material that has a process within TSM will be considered a "waste disposal".

The logistical expenses generated by authorized material for return to the supplier will be absorbed by the supplier.

TSM will request a credit note or RMA depending on the supplier's country of origin. If there is no response in 4 days, TSM will execute a debit note to apply it in the next periodic payment or will make a balance account if is needed.



For material NG, supplier needs to follow "No conforming part flow" steps assigned to supplier in order to give material disposition.





NOTE: Field quality performance and Cost Recovery Concerns will be a significant factor in new product sourcing decisions.

(1) Information conveyance

Clarify the procedure of defect handling along with the reporting route, from the detector of the quality defect (including Tachi-S information) to the responsible person for quality assurance and Tachi-S and clarify the system of association with related departments.

Note that the responsible person for quality assurance shall assess the significance of the quality defect and decide on the method of countermeasures.

(2) Maintaining production at Tachi-S

Suppliers shall communicate through the part receipt contact of Tachi-S control production department and SQC to secure and supply parts to maintain production at Tachi-S. The handle of inventory at suppliers and Tachi-S shall be discussed.

(3) Handling and improvement

(1) For any defects, check the product itself and investigate causes, and execute appropriate handling and improvement.

Also, it is necessary to take temporary countermeasures until the permanent countermeasures are taken.

(2) If there are <u>concern about</u> quality-non-conforming parts being <u>passed</u> <u>through</u>, the responsible person for quality assurance shall <u>direct the</u> <u>production stoppage</u>.

③ <u>Clarify the method of countermeasures against defects concerning</u> <u>special</u>

characteristics and record the results of the actions taken.

(4) Defects passed through to Tachi-S

For any <u>quality defect that could have been passed through to Tachi-S</u>, assess the situation immediately and take appropriate action, and at the same time, make a (<u>report it must include containment action</u>) to the <u>Tachi-S SQC</u> and follow their direction.

(5) Countermeasures for the reoccurrence prevention

(1) Countermeasures for reoccurrence prevention for individual cases Assess causes of occurrence and for passing through quality defect from the perspective of the relevant product itself, the process, and human elements (operators and managers), and take permanent countermeasures.

In addition, execute the same countermeasures for similar parts.

Also, perform training for operators and inspectors (and persons concerned), as well as operation observation.

(2) Countermeasures for reoccurrence prevention in terms of systems



In order to prevent the occurrence of a defect due to a same cause, take countermeasures in terms of work systems (procedures, technical standards, management standards, and organization, etc.).

(3) Execution of audits

The responsible person for quality assurance shall execute an audit on the validity of the defect handling executed and on the countermeasure for preventing reoccurrence, as well as on the continued observation of the measures.

(4) Procedure for the initial delivery of countermeasure products For the initial delivery of products for which defects have been handled and countermeasures have been taken, conduct the delivery procedure by following <u>Item 3-3 "Control of initial products."</u>

(6) Procedure for initial delivery

In the case where a defect has been handled and countermeasures have been taken, conduct the procedure for initial delivery for the delivery of countermeasure product.

Submit the initial product delivery notice and inspection results report,

etc.

(7) Special acceptance

For any quality defects that could have been passed through to Tachi-S, assess the situation immediately and take appropriate action, and at the same time, make a report to the Tachi-S SQC and purchasing, and follow their direction.

If making a <u>special acceptance</u>, submit the "Waiver form" to the Tachi-S SQC, purchasing, production control in charge beforehand. The highest authority to approve Waiver is QA Manager, be aware of it due to can be invalid.

Note: All the special acceptances requested by the supplier must arrive through the purchasing department, who is in charge of internal monitoring (tracing).

(8) Report on details of improvement taken

When requested for an answer on the details of defect improvements taken by filling out <u>Attached in the annexes PO-Q-8-B-A02</u>, "Inspection <u>Quick Notice and Correction Records"</u> (issued by Tachi-S), suppliers shall enter details in <u>Attached in the annexes PO-Q-8-B-A02</u> "Analyze Report <u>(Countermeasure report for the prevention of reoccurrence, 8D report)</u>", and submit it along with the answer in "Inspection Quick Notice and Correction Records" to the SQA / SQC within the time limit determined by Tachi-s.

-23 Unify management of issues & countermeasures in prototype phase

* Refer to 4-1-2 "Design prototype phase," Item -14.



-24 Tier N management by supply chain chart

* Refer to 5-1-1 "Project plan for new products," Item -8.

-25 Substance of Concern (Specified substances)

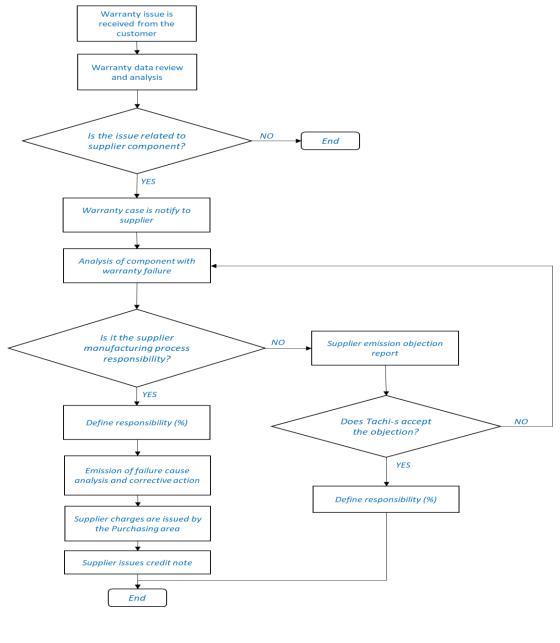
* Refer to 5-1-1 "Project plan for new products," Item -10.

-26 Control of initial products

* Refer to 5-1-1 "Project plan for new products," Item -13.

5-2 Warranty Claim- Cost

PURPOSE: Define the method to be utilized by suppliers and Tachi-S to improve the quality of supplied warrantable parts/components based on customer/field feedback and the cost sharing requirements.





REQUIREMENTS:

 Suppliers will support Tachi-S in warranty reviews when required by the Tachi-S team.
 Supplier manpower support will be needed in the event that a warranty investigation is conducted into the Supplier's deliverable or a system that interacts with the Supplier's deliverable part.

3) Suppliers may need to provide engineering and/or manufacturing expertise.

4) Participation in root-cause analysis activities, measurement, and testing may be required.

5) Suppliers may be required to share warranty costs with Tachi-S. In the event that a Supplier manufacturing method is responsible, the Supplier will be fully responsible for the warranty cost.

6) In any other case, the cost sharing responsibility will be determined as follows:

Category (The situation of the warranty event)	Responsibility (Percentage of Customer's charge to Tachi-S shared by Supplier)	Rationale (Why this percentage is suggested?)
Supplier-controlled manufacturing problem.	100%	It is the Supplier's manufacturing issue. The Supplier will be responsible for the issue and will seek payment from their supplier if applicable.
Problem caused by interaction with a failed non-Supplier component.	0%	The Supplier is not responsible for the failed component and has no control over its interaction with Tachi-S assembly in the design.
Problem related to Tachi-S assembly with mating components or Customer installation of the product.	0%	The Supplier is not responsible for manufacturing issues that occur outside of the Supplier manufacturing facility.
Problem related to Tachi-S or Customer Service procedures (damage or replacement required because of service procedure rather than failure).	0%	Supplier is not responsible for service procedures that are developed for the product and has no input on the service features of the mating or associated products.
No cause can be determined after research by Tachi-S and Supplier specialists.	Review together with the Commercial area to define charges.	In the unlikely event that no cause can be determined for the failure, Tachi-S and the Supplier should share the costs.
The issue cannot be duplicated by Tachi-S and Supplier group specialists.	Review together with the Commercial area to define charges.	If the issue cannot be duplicated at all, Tachi-s will share a portion of the Customer charges in accordance with the Customer standard for a design responsible supplier.

Table A.



7) Design review will be conducted as a joint activity.

8) Tachi-S and the supplier will evaluate the contribution of various factors in design, development, manufacturing, and transportation that may influence the defect that has resulted in the warranty claim. Suppliers are encouraged to participate actively in this investigation.

9) The product of this investigation will be an agreed-upon percentage of cost responsibility for both the Supplier and Tachi-S.

10) If the Supplier feels that a subcomponent of their assembly is largely responsible for the defect, the Supplier may pursue their own negotiations with the supplier of that component.

Note: Any expense incurred for a Supplier Responsibility Warranty Claim will be notified and charged to the supplier, and a corresponding penalty will be added based on the Table 1.1

5-3 Quality assurance for mass production phase

1) Ramp-Up control

Suppliers shall establish and execute a "ramp-up activity plan" to secure quality and
delivery requirements, while striving for early stabilization and
daily control early in the mass production start-up (SOP) phasetransitioning
to
(approximately 3
months). For this purpose, establish procedures for
up control" and manage based on the procedures.

Plan shall be received by Tachi-S SQC during pre-production stage, reviewed, approved and followed up. It should be signed back to the supplier at the beginning and end of the activity.

-1 Ramp-Up Activity plan

(1) Establish the ramp-up activity plan including the following items.

- (1) Objective model and part number
- (2) Name of supplier and manufacturing plant
- ③ Period of ramp-up control activities
- (4) Target value (delivery quality, process quality, receiving quality, equipment failure)

(5) Organization (Total responsible person, quality control responsible person, production control responsible person, production responsible person, etc.)

(6) Feedback system for information-sharing (for early countermeasures against causes and improvement)

 (7) Ramp-up control items (receiving inspection, inspection within process, increase of Shipping inspection frequency [100% inspection], special inspection)



(8) Assessment criteria for closing ramp-up control activities *Attached in the annexes PO-Q-8-B-A02. <u>"Ramp-Up Activity plan"</u>

(2) Record-keeping: "Ramp-Up Activity plan" according to <u>Table 1</u>. <u>Records retention cycles</u> for **"Tachi-S"**.

-2 Activity to achieve Key targets

(1) Especially, take the following points into account for early quality stabilization.

(1) Increasing the frequency of sampling, adding inspection items, and executing special inspections, e.g., sampling inspections

(2) Sharing problem information among related departments and investigating causes for early problem-solving

(3) Evaluating the process capability index and process rejection rate, and striving for process improvement based on the evaluation result.

-3 Audit to close "Ramp-up Activity"

Tachi-s QC team shall check and evaluate the ramp-up control status and confirm that the closing conditions are satisfied by an audit. Tachi-s may decide to re-audit the Supplier once all corrective actions have been implemented, or may at the engineer's discretion, re-assess the non-conformances on the next scheduled audit or visit.

NOTE: The performance during development stage may require the indispensable support through a resident at Tachi-S facilities.

(1) Record-keeping: Records of closing ramp-up activity according to <u>Table 1. Records retention cycles</u> for "Tachi-s".

-4 Control of initial products

* Refer to 5-1-1 "Project plan for new products," Item -13

2) Daily control

-1 Quality target achievement management

Suppliers shall set a target with regard to delivery defects, process defects, and receipt defects (see <u>Table 4</u>. PPMs per commodity).

Establish procedures for implementation related to "daily control" for quality improvement and manage based on the procedures.

(1) Target management

Establish an organizational execution plan to attain the target and set up periodical meetings (monthly, etc.) to manage the improvement progress.



Table 4. PPMs per commodity

			PPMs Target		
ITEM	CODE	COMMODITY	2025	2026	2027
1	A-001	Cables (Electric) 7		7	7
2	A-002	Cables (Mechanical) 7		7	7
3	A-003	Electrical (Harness)	7	7	7
4	A-004	Electrical (Heaters)	7	7	7
5	A-005	Electrical (Motors)	7	7	7
6	A-006	Electrical (Switches)	7	7	7
7	A-007	Fasteners	7	7	7
8	A-008	Foam (Chemicals)	7	7	7
9	A-009	Foam (Molded)	7	7	7
10	A-010	Foam (Pour in place)	7	7	7
11	A-011	Hard board (Molded)	7	7	7
12	A-012	Hard board (Sheet)	7	7	7
13	A-013	H-Clips (Plastic)	7	7	7
14	A-014	Mechanism (Active HR)	7	7	7
15	A-015	Mechanism (Lifter)	7	7	7
16	A-016	Mechanism (Lock) 7		7	7
17	A-017	Mechanism (Lumbar) 7		7	7
18	A-018	Mechanism (Recliner)	7	7	7
19	A-019	Mechanism (Track) 7		7	7
20	A-020	Mechanism (Walk in) 7		7	7
21	A-021	PIP (Pour in place) 7 7		7	7
22	A-022	Plastic (Bags - Covers)			7
23	A-023	Plastic parts (Multishot) 7 7		7	7
24	A-024	Plastic parts (Blowed)	7	7	7
25	A-025	Plastic parts (Injected)	7	7	7
26	A-026	Plastic parts (Press Molded)	7	7	7
27	A-027	Rubber products	7	7	7
28	A-028	Safety (Air bag)	7	7	7
29	A-029	Safety (Buckle) 7 7		7	7
30	A-030	Staples	7	7	7
31	A-031			180	180
32	A-032			180	180
33	A-033	Rotary mold injection 7 7		7	7
35	A-035			7	7
36	A-036	Plastic Overmolded	7	7	7
37	A-037	Control Climate System (CCS)	7	7	7
38	F-001	Casting	7	7	7
39	F-002	Coating (paint, chrome, zinc)			7

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10	1			I _	1 _
40	F-003	Coating (plastic, PVC)	7	7	7
41	F-004	Machinery	7	7	7
42	F-005	Metal (Coil)	7	7	7
43	F-006	Metal (Sheet)	7	7	7
44	F-007	Metal (Springs)	7	7	7
45	F-008	Metal Large Parts	7	7	7
46	F-009	Metal Medium Parts	7	7	7
46.1	F-009TF	General Sub Assemblies	7	7	7
47	F-010	Metal Small Parts	7	7	7
48	F-011	Pipes (Formed)	7	7	7
49	F-012	Pipes (Mills)	7	7	7
50	F-013	Welding and frame assy	60	60	60
51	F-014	Wires (Bended or stamped)	7	7	7
52	F-015	Wires (Coil)	7	7	7
53	F-016	Cold forging	7	7	7
54	F-017	Stabilizer Weight	7	7	7
55	M-001	Lubricants	7	7	7
56	M-002	Weld gas	7	7	7
57	M-003	Weld wire	7	7	7
58	M-004	Plastic pack & containers	7	7	7
59	M-005	Carton pack & containers	7	7	7
60	P-001	Foam (Chip-Recycled)	7	7	7
61	P-002	Foam (Slabs)	7	7	7
62	P-003	Glue	7	7	7
63	P-004	Sensors (Position)	7	7	7
64	P-005	Sensors (Weight)	7	7	7
65	P-006	EPP core foaming	7	7	7
66	P-007	Foam (Wadding)	7	7	7
67	T-001	Carpet (Coil)	7	7	7
68	T-002	Carpet (Cut-Molded)	7	7	7
69	T-003	Fabric (Non visible)	7	7	7
70	T-004	Fabric (Non woven)	7	7	7
71	T-005	Fabric (Safety)	7	7	7
72	T-006	Fabric (Visible)	100	100	100
73	T-007	Foam (Lamination)	100	100	100
74	T-008	Isofix buttons	7	7	7
75	T-009	Labels and tags	7	7	7
76	T-010	Laces, straps & ropes	7	7	7
77	T-011	Leather (Cut pieces)	52	52	52
78	T-012	Leather (Hide)	52	52	52
79	T-012	Paper cord	7	7	7

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80	T-014	Plastic (Fasteners)	7	7	7
81	T-015	Extruded and co-extruded	7	7	7
82	T-016	Stickers	7	7	7
83	T-017	Thread	7	7	7
84	T-018	Velcro	7	7	7
85	T-019	Vinyl	7	7	7
86	T-020	Zippers	7	7	7
87	T-021	Leather lamination	7	7	7
88	T-022	Trim air flow spacer	7	7	7
89	T-023	Embroidery	7	7	7
90	0-111	OTHERS	7	7	7

-2 Processing of non-conforming quality parts and reoccurrence prevention

* Refer to 5-1-3 "Production Trial phase," Item -22.

-3 Safety parts control

* Refer to 5-1-3 "Production Trial phase," Item -7.

-4 Special process control

* Refer to 5-1-3 "Production Trial phase," Item -8.

-5 Study process control level

In order to improve and manage the quality of the products, figure out the control level for the process by using the process capability index to promote improvement. Thus, execute activities for the improvement of the process control level.

The process control level must be at least the level of the following value.

(1) Assessment criteria

1	Safety	Process capability index: Cpk \ge 1.33
	characteristics/important and function characteristics	Process rejection rate: P < 0.01%
2	General characteristics	Process capability index: $Cpk \ge 1.00$
		Process rejection rate: P < 0.30%

- For important items, utilize control chart, etc.
- All products delivered to Tachi-S must be free of defects.

(2) Handling



If the process capability (Cpk) index and process rejection rate (P) do not satisfy the above conditions, take measures for improvement. If it is not possible to satisfy the process capability, execute the 100% inspection.

(3) How to deal with the process capability index

(1) When the average value of the Cp measurement data equals the median value of the standard (variation)

(2) When the average value of the Cpk measurement data does not equal the median value of the standard (deviation, misalignment)

In this standard, Cpk is to be adopted.

Reason: In most cases, the average value of the measurement data does not equal the median value of the standard, and even when Cp is OK, Cpk is sometimes "no good," possibly resulting in defects being passed through.

-6 Change management

Change needs to be conducted with due consideration to the influence on the production process and quality due to process changes, along with influence on quality due to design specification changes. For this reason, establish procedures for implementation related to "change management" and manage based on the procedures.

For process change or design change by Tier 2 and subsequent tier suppliers, suppliers shall also conduct "change management" based on <u>Supplement 4</u>) "Process Change Guideline" and <u>"Change point control Procedure,"</u> along with <u>Supplement 5</u>) "Engineering Change Guideline" for permanently stabilizing quality, as well as periodically checking the understanding of the "Change

Point Control Procedure" by the Tier 2 and subsequent tier suppliers.

(1) Management of process change

1 Scope

	(1) Scope	
I	New introduction,	- Change in production process or production site, etc.
	modification, or transferring of equipment (molds, jigs, and tools)	- New introduction, modification, or transferring of machine and equipment, etc.
II	Change in methods	- Change in processing condition, production method, or process sequence, etc.
		- Casting, forging, heat treatment, welding, Surface treatment, and molding, etc.
		- Change in special process method or condition, etc.
III	Change in materials	- Quality of material, grade, manufacturer, and secondary material, etc.



* When Tier 2 or subsequent tier suppliers have executed a change of I, II, or III above.

* Refer to <u>Supplement 4</u>) "Process Change Guideline" and "Change point control Procedure," along with <u>Supplement 5</u>) "Engineering Change <u>Guideline."</u>

- (2) Advance check
 - Clarification of the reason for the change or contents to be changed (including target part)
 - Study quality targets and how to ensure quality (including plans) While investigating how to ensure quality, clarify the process FMEA, trial period, method, quantity of samples, quality check process capability study, internal audit, undergoing of the audit, preparing of standards, target part list, education given to operators and inspectors, control of initial products, and risk verification.
 - Making an execution plan and completing it. (for every equipment introduction step, including production volume and production start timing, etc.)
- ③ Details of activities
 - Execute activities based on the quality target and how to ensure quality in "process change."
 - In addition, execute the following items.
 - Record check results related to the change.
 - <u>Check that the quality levels before the change and after the change are</u> <u>the same</u>.
 - <u>Check that the risk verification results, and workaround plan related to</u> the change have surely taken root.
 - Assess whether or not the execution of the process change is allowed based on the results of the internal audit (voluntary audit).
 - When a Tier 2 or subsequent tier supplier is changed, review and check the "Tier N management by supply chain chart."
 * Defente 5 1 1 "Preject plan for nour products" I tem 9
 - <u>* Refer to 5-1-1 "Project plan for new products," Item -8.</u>
 - Execute activities by following the method of "ramp-up control."
 <u>* Refer to 3-2 "Quality assurance in the mass production phase," Item 1).</u>
 - When requested by Tachi-S, respond promptly.

(4) Procedure for Tachi-S

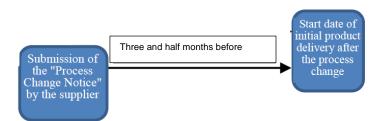
- In principle, the due dates for the submission of the "Process Change Notice" are as follows.
 - I Nissan, Honda, Submitted to Tachi-S **three** and a half Toyota area months before the start date of initial product delivery



Π

Others than the above **(Tier N)**

Submitted to Tachi-S **three** and half months before the start date of initial product delivery



- When a change of process and / or engineering is required by any supplier, it must be sent through department purchases, three and a half months before the start date of the initial delivery of the product (three and a half months before the date planned to adopt change).
- Once the purchasing area receives notification of any engineering change from the supplier, it will be the area responsible for issuing the format used according to the application corresponding to the customer or depends of the OEM for filling.
- For urgent matters, contact Tachi-S Purchasing and follow their direction.
- In principle, <u>a process change cannot be executed during the ramp-up</u> <u>activity period (approximately three months).</u>

(5) Forms route



6 Receiving audits

When Tachi-S deems necessary, suppliers shall undergo an audit by Tachi-S on activities and results for a process change.

(7) Record-keeping: Records related to process change management according to <u>Table 1. Records retention cycles</u> for **"Tachi-S".**

(2) Management of design change

① Scope

- Change of specifications that Tachi-S requests
- Design change required due to a process change
- Change in material/material grade (including components/blending) or material manufacturer (to be included in the material change under the same specifications)



• Others that suppliers assess as critical

(2) Activity Details

- Evaluate the adequateness of the design change, etc.
- Execute activities to ensure appropriate quality appropriately depending on the scale of the design change.
- Execute activities by following the methods of "ramp-up control."

(3) Tachi-S Procedure

Regarding the preparation and submission of the "Design Change Application," devise an adoption schedule considering the schedules of adequateness evaluation before the change and process change procedure, in principle.

* Refer to Supplement 6) "Initial products control of guideline."

④ Forms route



(5) Record-keeping: Records related to design change management according to Table 1. Records retention cycles for "**Tachi-S**".

-7 Preparation of standards and so on

* Refer to 5-1-3 "Production Trial phase," Item -6.

-8 Education and training

* Refer to 5-1-3 "Production Trial phase," Item -9.

-9 Lot control (Traceability control)

* Refer to 5-1-3 "Production Trial phase," Item -12.

-10 Equipment Control

* Refer to 5-1-3 "Production Trial phase," Item -21

-11 Management of measuring equipment accuracy

* Refer to 5-1-3 "Production Trial phase," Item -10.

-12 Periodic inspection and Testing

Based on the quality agreement, check that products manufactured by mass production processes satisfy Tachi-S requested specifications.

(1) Test

 Reliability test (flame retardant property of Trim/resin, functionality, strength, and durability), etc.

Periodic data that Tachi-S and a supplier assesses as necessary



- For the above-mentioned test, observe the "inspection standard," etc.
- When requested by Tachi-S, promptly submit the results and data.

-13 Control of initial products

* Refer to 5-1-1 "Project plan for new products," Item -13

-14 Kaizen activity on the work floor (Gemba)

Suppliers shall continuously perform daily improvement activities to enhance process quality.

(1) Improvement activities

For process defects (including chronic defects), conduct daily meetings (QRQC meetings, etc.) with the attendance of related departments to decide on the handling of and measures against defects, and follow up on any progress.

(2) Prevention

Give feedback to upstream processes to prevent reoccurring defects and utilize it to prevent-occurrence-activities.

-15 Tier N management by supply chain chart

* Refer to 5-1-1 "Project plan for new products," Item -8.

-16 Substance of Concern (Specified substances)

* Refer to 5-1-1 "Project plan for new products," Item -10.

-17 Quality record management

Suppliers shall show or submit quality records according to Tachi-S request. For proper management of the quality record using the procedures that the suppliers have set, establish procedures for implementation of "quality record management" and manage based on the procedures.

(1) ObjectsQuality records concerning safety parts and special processesQuality records concerning general processes

(2) Quality record

Welding destruction check sheet, daily check sheet for equipment, inspection results report, skill training plan table, shipment management table, production order, finished product inspection check sheet, start-up check sheet for measuring equipment, record of macro welding inspection, and record of reworking, etc.

(3) Discarding



Discard the quality records when the storage period has expired after destroying them to render them unreadable.

(4) Record-keeping: Quality records

The storage period differs depending on the customer. Observe the respective storage period as shown below.

For other customers, observe the storage period for Tachi-S Table 1.

3) Supplier self-audit

In order to check and evaluate the quality assurance function in each phase of product development and design through to mass production, and to ensure that products meet the quality requirements that.

An evaluation of the aspects, Quality, Delivery and Supplier Capability is carried out for the evaluation of its viability, in the corresponding areas of the QCD Supplier Pre-approval and Evaluation Organization.

Tachi-S requests are permanently and stably manufactured and delivered, establish procedures for implementation related to "auditing," covering the following items, and manage based on the procedures.

Additionally, in order to ensure that the quality management system properly functions throughout the entire company, periodically execute an internal quality audit.

-1 Selection of person responsible for the Audit

The person responsible for quality assurance shall nominate a person responsible for conducting each type of audit.

This person shall perform the following tasks.

(1) Making and executing an audit plan, and following up on the execution results

(2) Cooperation in audits by Tachi-S

-2 Audit types

Quality assur	ce Check and evaluate systems, standards, administration,	and
system audit	implementation status, etc., to assure product quality in each pha product development and design through to mass production and in the market, based on the items that Tachi-S requests.	
Process audit	Check and evaluate whether the process control (level) is adequate whether the standards are observed.	e and
Product audit	Check and evaluate the status of achievement for product quality the specified in the product standard (or specifications shown in de drawings, etc.), which includes the Tachi-S requirements.	



Audit of process changes	When processes are changed due to design change and process change, etc., check and evaluate whether a process control level equal to or higher than the conventional one can be achieved.
Audit of Tier 2 suppliers	Plan and execute audits following the methods of each item above for Tier 2 suppliers.
Internal audit of quality management system	Periodically check and evaluate whether the QMS (Quality Management System) functions properly throughout the entire company, by conducting an internal audit.

-3 Audit management

Establishing evaluation standards	Establish evaluation standards that clarify the items to be evaluated, details to be checked and required levels, before executing audits, and then implement the evaluation.
Planning of audits	The audit responsible person shall make an annual management plan for each audit type and execute it. (Extraordinary audits are to be planned on a case-by-case basis.)
Execution of audits and follow- ups	The person responsible for the audit shall execute the audits in accordance with the plan by following the procedures, as well as following up on the progress of improvement and the validity of improvement effect.

4) Supplier management of Tier 2 and under Tier 2

In order to manage Tier 2 and subsequent tier suppliers so that the that Tachi-S quality requirements are securely realized in the work of Tier 2 and subsequent tier suppliers, establish procedures for implementation related to "supplier control" and manage based on the procedures.

-1 Definition of term

(1) Supplier (Tier 1 supplier): Supplier receiving a parts order directly from Tachi-S.

(2) Tier 2 and subsequent tier suppliers: Refers to a supplier that provides components to the Tier 1 supplier or a company to which processing or inspection, etc., is outsourced by the Tier 1 supplier; includes subsequent tier suppliers, these are collectively referred to as "Tier 2 and subsequent tier suppliers.".

-2 Selection and agreement

When a supplier utilizes Tier 2 supplier, the supplier shall decide the criteria for selection, and shall then make an agreement with them.

-3 Quality assurance requirements

(1) In principle, the requirements that a supplier requests from Tier 2 and subsequent tier suppliers are to be the same as this standard, but the



supplier may adapt standards according to the actual conditions of the Tier 2 and subsequent tier suppliers, if necessary.

- Inspection Based on the quality requirements for parts, stipulating the details for standard the preparation and submission of the inspection standard (check sheet) related to inspections conducted by the Tier 2 and subsequent tier suppliers.
- Control plan Stipulating the details for preparation and submission of the QC process chart in which the quality assurance methods executed by the Tier 2 or subsequent tier suppliers in the production department, inspection department, and management department are described, in the order of production process and in a manner such that quality assurance work throughout the entire processes can be understood.
- ProcesschangeStipulating the notification method when Tier 2 or subsequent tier(design change)suppliers change a process.
- IMDSTier 2 suppliers shall assure Tier N got training and have ability to submit
on time and according to IMDS rules.
- PSW PSW's from Tier N should be included into the PPAP package to Tachi-s. PSW's should have MDS ID number into it to be approved.
- Control of initialStipulating the notification method when Tier 2 or subsequent tierproductssuppliers deliver initial products.
- Handling for the Stipulating the handling method when a quality defect occurs in Tier 2 or occurrence of subsequent tier suppliers. defects
- Ramp-up control Stipulating the quality assurance activities that Tier 2 or subsequent tier suppliers execute in the ramp-up control.

(2) Utilizing noted points

When utilizing Tier 2 or subsequent tier suppliers, suppliers shall pay due attention to the following concerning quality assurance, as well as clarify the allocation of roles between the supplier and the Tier 2 or subsequent tier supplier concerning quality assurance.

(1) Clarification of quality requirements for products provided by Tier 2 or subsequent tier suppliers and necessary conditions concerning production (particularity in production methods, etc.)

(2) Evaluation of the capability of Tier 2 and subsequent tier suppliers

- i. Manufacturing technology (experience and result of production, production technology, equipment, and qualification, etc.)
- ii. Production capability (capability of undertaking more production volume or earlier delivery dates, process capability to secure quality, etc.)



iii. Quality control capability (quality assurance system and others)

-4 Audit and coaching

Suppliers shall conduct a quality audit of Tier 2 and subsequent tier suppliers periodically or as necessary for checking and evaluation, and shall give instructions for defects. Tachi-S may attend the audits as necessary.

-5 Safety parts application

The selection and utilization of Tier 2 or subsequent tier suppliers falls under the decision of suppliers on their own responsibility. However, when utilizing Tier 2 or subsequent tier suppliers for safety parts (vital parts), submit the "Use Notice of Tier 2 or under Tier 2 Suppliers" to the quality control section via the procurement department in charge in advance, and then follow the necessary directions.

(If the application of this prescription is not appropriate due to special reasons, it may be omitted.)

<u>* Attached in the annexes PO-Q-8-B-A02.</u> <u>"Use Notice of Tier 2 or under Tier 2 Suppliers."</u>

-6 Tier N management by supply chain chart

* Refer to 5-1-1 "Project plan for new products," Item -8.

5) Score card

To evaluate and verify that suppliers are under necessary parameters to accomplish with necessities of supply chain required by Tachi-S; monthly scorecard will be applied, where performance of three items are review: **Quality, Cost and Delivery**. It applies to all suppliers that deliver material and/or service that influences directly on Tachi-s product.

Area will send to supplier monthly scorecard results with a resume of performance by categories as next:

Rank	Category	Level	Status indicator		Escalation process
95-100	Outstanding	L1	ОК	Meets expectations	General supervisar
80-94	Good	L2	Monitoring Plan	Meets expectation	

8	TACHI México	<u>-</u> S			
		•			
60-79	Regular	L3	Improvement plan	Marginal	General Manager
<59	Poor	L4	Running Change	Improvement Required	President

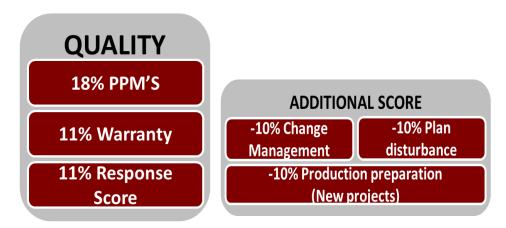
L1: Suppliers to consider for new projects.

L2: Supplier who needs a Monitoring plan to reach a better level

L3: Supplier needs improvement, if supplier has three consecutive months as L3, it will fall in business hold, and it cannot quote for new projects. Supplier needs to present an improvement plan.

L4: Risk supplier, needed to present an improvement plant by company director or president; supplier will be on business hold and if there is no improvement, Tachi-s reserves the right of change supplier.

As quality Tachi-s also evaluate the Change Management affectations to the plants, Plant disturbance and Production preparation issues for New projects, in case of object, it's necessary inform to purchasing department TSM * <u>Refer to 5-1-1</u> "Project plan for new products," Item -8.



Score Card evaluation:



- Tachi-S shall conduct audits of suppliers based on the annual management plan or may conduct extraordinary audits as necessary in order to check that suppliers are addressing quality assurance activities based on the "Quality Control Standard for Suppliers."
- Supplier will be notified during the first month of the year about the day(s) schedule for the audit. Any adjustment must be agreed with the SQC.
- Self-Assessment results shall be submitted one month prior to annual audit to Tachi-S QC Manager and SQC, in case of been L3 or L4.
- When requests for improvement or recommendations are made during audits by Tachi-S, suppliers shall submit the improvement plan into 30 days after assessment to Tachi-S and implement improvement based on the improvement plan.
- Tachi-S shall execute follow-up audits on the progress status of improvement, as needed.

To review the content of a general audit, <u>Attached in the annexes PO-Q-8-B-A02</u>. <u>"Audit format"</u>.



8. List of Quality Assurance activities on each phase in Supplier

1	2 Required contents enhancing pr								e phase phase n phase
	-	Items	Main works	Relevant documents	P- Plan	DP- phas e	PT-	MP-	
T	T	1 Preface					_		
		1-1 Purpose							
		1-2 Scope							
		1-3 Definition of terms							
		1-4 Production process outline							
	┢	2 Basic concept for quality assurance							
		2-1 Quality assurance for purchased products by Tachi-S							
C			•Goal of TS16949		0				
-	-	2.2	•Selecting a responsible person for quality	•Notification of the Responsible Person	0				
		constitut accorrance	assurance	for Quality Assurance					
			 Selecting a person in charge of environment 	 Notification of Person in Charge of Environment 	0				
		3 Requirements on quality assurance							
		3-1 Quality assurance for new products							
		3-1-1 Project plan for new products							
		-1 Object parts			0				
		-2 Selection of person responsible for project			0				
	-		Action plan	•New Products Quality Assuarance Action Plan	0				
		-4 Progress evaluation of each phase	 Transition judgement by self-evaluation 		0	0	0		
c			•Design FMEA •Past failure(Lessons Learned = Kakotora) checks •Hard operation elimination		0				
0		-6 Design FMEA	•Past failure (Lessons Learned = Kakotora)	•Design FMEA results	0	0	0	0	
		-7 Evaluation by tests	•Reliability test	• Reliability test plan and result reports	0	0	0	0	
0		-8 Tier N management by supply chain chart	•Tier N management	• Supply Chain Chart	0	0	0	0	
0		-9 Confirmation for design prototype preparations status	•Plan progress confirmation	• Production Preparation Confirm Checksheet	0				
0		-10 Substance of Concern (Specified substances)	Substance of Concern non-inclusion management * Submit at other phases	Substance of Concern Non-inclusion Analyze Result Report Evidence Form of above report Actual State Sheet Indicating Non- inclusion in Delivered Parts	0	0	0	0	
0		-11 Preparation of PPAP (Production Part Approval -11 Process) related documents	•PPAP requipment documents	•PPAP Correspondence Table			0		
0			•Validation approximately 150% of production capacity		0		0		
c	5	-13 Control of initial products	•Initial quality check •Display initial parts * Submit at other phases	 Initial Product Delivery Notice Inspection Results Report 	0	0	0	0	
\square		3-1-2 Design prototype phase							
		-1 Confirmation of specification requirements				0			
0		-2 Consideration of decisions for assurance methods	[Drawing base] ·QA table ·QC process chart ·Inspection Standards · Error-proof system			0			
0	1	-3 QA table		•QA Table		0			
0			•Hard-operation elimination •ast failure(Lessons Learned = Kakotora)			0	0	0	
	~~	-5 Process FMEA	599.691	Process FMEA results		0	0	0	
	~~~	-6 Control plan (QC process chart)	•QC process chart	• Control plan (QC Process Chart)		0	0	0	
		-7 Inspection Standard	<ul> <li>Inspection Standard</li> </ul>	<ul> <li>Inspection Standards</li> </ul>		0	0	0	
C	2		•SNP	Delivery Packing Style Application		0	0	0	
0			•Production Preparation KPI control •Production Preparation progress Evaluation	Production Preparation Progress Confirm Plan Production Preparation Confirm Checksheet		0	0		
0		-10 Setting equipment condition and maintenance control for equipments, Jigs, Tools	•Establishing optimum condition			0	0	0	
0			•Chack by inspection gauges			0	0	0	(For over sea suplliers)
0	~	-12 Environment control in inspection area	• illuminance (Approximately 800 Lux) •Noi	se		0	0	0	
0			* Refer to above 3-1-1Item -10.			0	0	0	
0		-14 Unify management of issues & countermeasures in prototype	Sure countmeasure for issues	•Quality Stabilization Control Chart		0	0	0	



Cla	ass							P-	DP-		MP-	
1	2				Items	Main works	Relevant documents	Plan	phas e	phas e	phas e	Remarks
		3	3.	-1-3	Production Trial phase							
				-1	Defect Prevention activities in manufacturing process	<ul> <li>Hard-operation elimination</li> <li>Past failure (Lessons Learned = Kakotora ) check</li> </ul>				0		
				-2	Control plan (QC process chart)	* Refer to above 3-1-2 Item -6.				0	0	
					Inspection Standard	* Refer to above 3-1-2 Item -7.				0	0	
0				-4	Standard work instruction	•Using photographs and illustrations				0	0	
0				-5	Limit Samples	Color, Finishing and so on.				0	0	
				-6	Preparation of standards and so on	•Inspection standard •QC process chart •Standard work instruction •Limit sample etc. •Consistency check in 3 standards •Regular update •Operation observation etc.				0	0	
	0			-7	Safety parts control	<ul> <li>Safety parts display</li> <li>Lot control</li> <li>Securement and maintenance of Process</li> <li>Capability by SPC sheet</li> <li>Rework part: Rework &amp; Records</li> <li>Operators qualification</li> <li>Record-keeping</li> <li>Self-audit</li> </ul>				0	0	
	0			-8	Special process control	•Tightening •Welding •Surface treatment •Riveting and so on.				0	0	
	0				Education and training	Preparing of Education & training tools     Work skill     Skill ability evaluation and optimize				0	0	
0				-10	Management of measuring equipment accuracy	•Record management and Calibration		••••••		0	0	
0				-11	Measurement System Analysis (MSA)	<ul> <li>Repeatability and Reproducibility of Gauge mesument</li> </ul>				0	0	
	0			-12	Lot control (Traceability control)	•First in first out according to production dates				0	0	
				-13	Inspection Jigs	* Refer to above 3-1-2 Item -11.				0	0	
				-14	Study process capability	Safety characteristics     Important function characteristics	•Process Capability Study Result Report			0	0	
				-15	Environment control in inspection area	* Refer to above 3-1-2 Item -12.				0	0	
0				-16	Validation production capability (Capacity)	* Refer to above 3-1-1 Item -12.		1		0		
0				-17	Ensure mass-production readiness	<ul> <li>Extract issues by approximately one-hour trial etc.</li> </ul>				0		
				-18	Equipment condition control	* Refer to above 3-1-2 Item -10.				0	0	
0				-19	Confirmation for production preparations status including equipments (Contain Dies/molds, Jigs/tools)	* Refer to above 3-1-2 Item -9.			0	0		
				-20	Evaluation by tests	* Refer to above 3-1-1 Item -7.				0		
	0			-21	Equipment Control	•Equipment daily check sheet				0	0	
	0			-22	Processing non-conforming quality parts and reoccurrence prevention	•Causes & contermeasure for Occurrence, flow out •Prevent non-conformance parts mix.	<ul> <li>Inspection Quick Notice and Correction Records -Analyze Report (Countermeasure Report for Prevention of Reoccurrence, SD report ) - Re-examination Proposal</li> </ul>			0	0	
	0			-23	Unify management of issues & countermeasures in prototype	* Refer to above 3-1-2 Item -14.				0	0	
0				-24	Tier N management by supply chain chart	* Refer to above 3-1-1 Item -8.				0	0	
				-25	Substance of Concern (Specified substances)	* Refer to above 3-1-1 Item -10.				0	0	
	0			-26	Control of initial products	* Refer to above 3-1-1 Item -12.				0	0	
			3-2	Qu	ality assurance for mass production pha	se						
				1) I	Ramp-Up control							
0				-1	Ramp-Up Activity plan	<ul> <li>Stabilization of Ramp-Up quality</li> </ul>	•Ramp-Up Activity Plan				0	
	0			-2	Activity to achieve Key targets	<ul> <li>Special management system</li> <li>AH is running smoothy</li> <li>Training for additional operators</li> <li>Early sharing of quality problem information</li> <li>Surely implement of coplated parts inspection</li> <li>Causes analyzz and improvement of defects at imspection</li> </ul>					0	
				-3	Audit to close "Ramp-up Activity"						0	
	0			-4	Control of initial products	* Refer to above 3-1-1 Item -12.		1			0	

## **S** TACHI-S México

C1a	ISS		Items	Main works	Relevant documents	P- Plan	DP- phas	PT- phas	MP- phas	Remarks
1	2					Plan	e	e	e	
		3	2) Daily control							
0			-1 Quality target achievement management	·Warranty ·Delivery ·Process ·Receiving					0	
			⁻² Processing of non-conforming quality parts and reoccurrence prevention	* Refer to above 3-1-3 Item -22.					0	
	0		-3 Safety parts control	* Refer to above 3-1-3 Item -7.					0	
	0		-4 Special process control	* Refer to above 3-1-3 Item -8.					0	
(	0		-5 Study process control level	•Cpk control, Control chart etc.					0	
•	0		-6 Change management	•Keeping Quality level •Risk management	Process Change Notice     Process Change Deployment Plan     Design Change Application     Inspection Results Report, Others				0	
			-7 Preparation of standards and so on	* Refer to above 3-1-3 Item -6.					0	
	0		-8 Education and training	* Refer to above 3-1-3 Item -9.					0	
	0		-9 Lot control (Traceability control)	* Refer to above 3-1-3 Item -12.					0	
			-10 Equipment Control	* Refer to above 3-1-3 Item -21.					0	
0			-11 Management of measuring equipment accuracy	* Refer to above 3-1-3 Item -10.					0	
			-12 Periodic inspection and Testing	<ul> <li>Reliability datas (flame retardant properties) etc</li> </ul>					0	
	0		-13 Control of initial products	* Refer to above 3-1-1 Item -12					0	
0			-14 Kaizen activity on the work floor (Gemba)	•QRQC activety					0	
0			-15 Tier N management by supply chain chart	* Refer to above 3-1-1 Item -8.					0	
0			-16 Substance of Concern (Specified substances)	* Refer to above 3-1-1 Item -10.					0	
			-17 Quality record management	<ul> <li>Setup of record-keeping term</li> </ul>					0	
			<ol><li>Supplier self-audit</li></ol>							
			-1 Selection of person responsible for the Audit						0	
	0		-2 Audit types	<ul> <li>Internal Quality Audit</li> </ul>					0	
			-3 Audit management	Top review					0	
Щ			-4 Reporting to Tachi-S						0	
	0		<ol> <li>Supplier management of Tier 2 and under Tier</li> </ol>							
			-1 Definition of term	•Agreement related Quality	TO ALC: ATC: A L		~	· · · · ·	_	
-+			-2 Selection and agreement -3 Quality assurance requirements	•Requipment details related Quality •Audit and Coacting	<ul> <li>Use Notice of Tier 2 or under Tier 2 Suppliers</li> </ul>		0	00	0	
	-		-4 Audit and coaching	<ul> <li>Tachi-S requested "use atandard of Tier 2 or under Tier 2 Suppliers"</li> </ul>			0	0	0	
			-5 Safety parts application				0	0	0	
0			-6 Tier N management by supply chain chart				0	0	0	
		4	Audit by Tachi-S						0	
		5	List of submitted documents ( Forms )		(29 forms)					
		6	List of Quality Assurance activities on each phases in Suppliers	(This lists)				$\langle$		



Class	Items	Main works	Relevant documents	P- Plan	DP- phas e	PT- phas e	MP- phas e	Remarks
	7 Supplements							/
	1) Guidance on Creating a QA Table							/
	2) Guidance on Creating Control Plan							/
	3) Guidance on Creating an Inspection Standard							
	4) Process Change Guidance							
	5) Engineering Change Guidance							/
	6) Initial products control of Guidance							/
	7) Guidance on Assigning a Lot Number							/
	8 Attached forms (Forms and entry examples for submitted docume	ents )						/
	Symbols : Notification							/
	1) Notification of the Responsible Person for Quality						/	
	<ul> <li>Notification of Person in Charge of Environment</li> </ul>							
	3) Use Notice of Tier 2 or under Tier 2 Suppliers							
	♦ 4) Process Change Notice							
	5) Process Change Deployment Plan							
	♦ 6) Design Change Application							
	♦ 7) Re-examination Proposal						/	
	8) New Products Quality Assurance Action Plan							
	9) Supply Chain Chart							
	10) QA Table							
	11) QC Process Chart (Control plan)							
	12) Inspection Standards (A) - (D)							
	13) Delivery Packing Style Application					/		
	14) Inspection Results Report					/		
	15) Initial Product Delivery Notice				/			
	16) PPAP Correspondence Table				/			
	17) Production Preparation Progress Confirm Plan				/			
	18) Process Capability Study Result Report				/			
	19) Production Preparation Confirm Checksheet #1-#5				/			
	20) Ramp-Up Activity Plan				/			
	21) Quality Stabilization Control Chart				(			
	22) Substance of Concern Non-inclusion Analyze Result Report							
	23) Evidence Form							
	24) Actual State Sheet Indicating Non-inclusion in Delivered Part	s						
	25) Inspection Quick Notice and Correction Records							
	26) Analyze Report (Countermeasure Report for							
	Prevention of Reoccurrence, 8D report)							



## **Supplement 1**

## 1) Guidance for Creating a QA Table

## 1. Overview

For parts requested by Tachi-S, delivered key points on design quality are investigated and potential defect modes are extracted for each process to create a QA Table for easy understanding as a ledger to assure no defects are created or shipped. The quality assurance methods thus created are broken into the QC Process chart and standard work instructions to promote stabilization of the process quality at an early stage.

## 2. Creating a QA Table

(1) Form

The QA Table form is <u>"C7-07-22 forms 6-1(for suppliers)"</u>.

Supplier's own form, if any, may be used.

(2) How to fill out the form

For how to fill out the QA Table form, see "About QA Table" (C7-07-22, Exhibit-1) and a filled-in example of attached form" C7-07-22, Form 6 (for suppliers)".

## 3. Submitting the QA Table

The original QA Table document shall be submitted to the applicable procurement department after the inspection standard is approved in the Production Trial

phase.

Note that when a completed item needs to be changed due to an engineering change, the form shall be also revised and submitted without delay.

## 4. Receiving the QA Table

to the supplier.

An applicable quality control section shall receive the QA Table submitted above, affix a receipt stamp, make and keep a copy of the document and return the

original

## 5. Keeping the QA Table

The QA Table shall be kept for 10 years after the start of mass production.



C7-07-22 Exhibit-1 March 28, 20 2014

## QA Table explanation

What is the QA Table? (Important assurance control items table) A format that visualizes process assurance

Formerly,

A standard work instruction was created from the QC Process chart (Process Control Charts) and inspection standards to ensure that key points for quality assurance were managed. However, it was unknown whether all the items where quality must be assured by the process were covered or not. The shop floor formats were not always linked to ledgers used at the site in terms of quality performance, such as warranty claims, delivered defects and process defects.

#### How to create the table:

(1) Process deployment

Break a process into work level.

(Refer to the Process and Manufacturing Method Plan.)

(2) Control points

- Items derived from important part characteristics.

- Controlled items for manufacturing quality

(Used in conjunction with Process FMEA)

(3) Degree of importance

- Derived from important part characteristics.

- (4) Important control items
  - Derived from important parts characteristics and process control characteristics.

* Make matrix with (1) and (2)

O: Error proofing process

•: Processing process

 $\diamond$ : Inspection (Confirmation) process

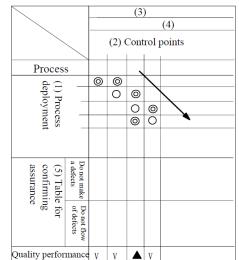
(5) Table for confirming assurance

- Indicates what kind of controlled items each control point has for assurance.

Do not make defects: Assurance in terms of factors

Do not let defects escape: Assurance in terms of results

- Quality performance: Indicates performance, such as process defects.





## 2) Guidance for Creating the Control plan

#### 1. Overview

This guidance sets forth creation and submission of a Control plan containing the quality assurance methods performed by manufacturing, inspection and control departments in the order of manufacturing processes to allow the supplier to gain an understanding of assurance tasks in the entire process.

We changed to a Control plan from the traditional QC process chart for **ISO 9001/IATF 16949.** 

#### 2. Creating the Control plan

The guidance details for creating the Process flow chart and Control plan are described here.

We handle these 2 documents as the Control Plan.

(1) Form

The process flow chart and control plan forms is attached in <u>the annexes PO-Q-8-</u><u>B-A02</u>.

For how to fill in the Process flow chart and Control plan, see next pages.

### 3. Submitting a Control plan

The original Control plan shall be submitted to an applicable procurement department after the inspection standard or QA Table is approved for safety parts, important parts and Tachi-S Quality Control Manager ordered parts.

Note that when a completed item needs to be changed due to an engineering or process change, the form shall be also revised and submitted without delay.

### 4. Receiving Control plan

An applicable quality control section shall receive the Control plan submitted above, affix a receipt stamp, make a copy and return the original to the supplier.

Exhibit-1



# How to fill out the Control plan

< Process Flow Chart> Numbers like (1), (2) --- used same numbers for fill instruction of P50.

No.	Items	How to fill out
(1)	Model	Same as the drawing.
(2)	Part name	Same as the drawing.
(3)	Part number	Same as the drawing. Also list Customer part number, when submitting to the Customer.
(4)	Applicable grade	Fill in main grade.
(5)	Schematic illustration	Provide a schematic illustration or picture.
(6)	Mark display	Fill in Special Characteristic symbol.
(7)	Revision	Describe the contents of the design change, process change or others. When process chart contents change, cross off the old information, write the new information and add triangle mark. $\triangle$
(8)	Process Flow	Make process chart using the below brevity codes for flow and input process sequence number.
		Brevity code: $\bigtriangledown$ Storage $\bigcirc$ Processing $\diamondsuit$ Check O Transportation
		Use the OEM's Safety characteristics symbols, where requested by the customer.
(9)	Registration No.	Input registration numbers for tracking.

# < Control Plan > Numbers like (1), (2) --- used same numbers for fill instruction of P51.

No.	It	ems		How to fill out
(1)	Production display	trial	phase	Check Mass production trial phase or Mass production phase.

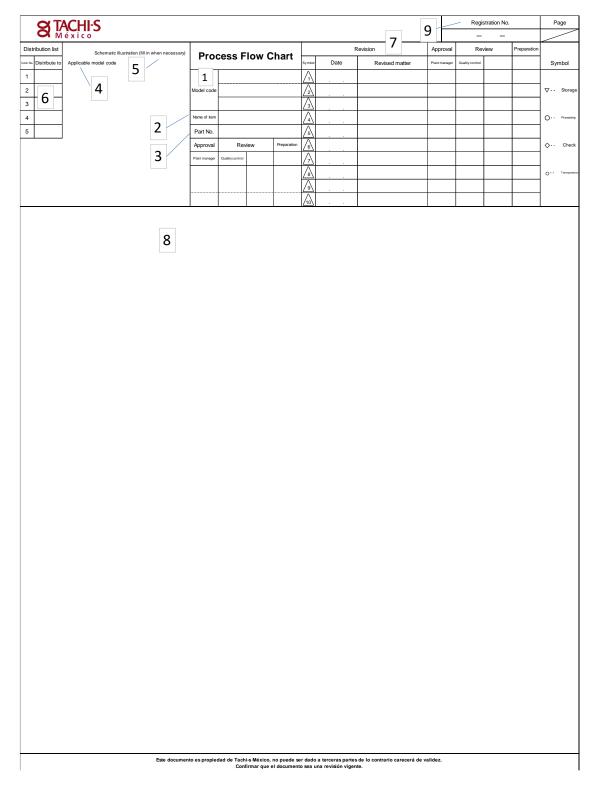


	Mexico	
(2)	Control Plan No.	Fill in Control plan number for tracking.
(3)	Part No./Level of latest change	Fill in part number, system (unit) no. or sub system (sub- unit) no.
(4)	Part name/detail	Fill in name of product/process and detail.
(5)	Supplier/plant	Fill in supplier name and creating department name for Control plan.
(6)	Supplier code	Fill in Tachi-S provided supplier code.
(7)	Main contact/phone No.	Fill in window person name and phone number.
(8)	Core team	Fill in all member names of Control plan creating and phone numbers. List format is better.
(9)	Supplier/Plant approval/Approval date	Get plant in charge approval. (when required)
(10)	Date	Fill in original version creation date.
(11)	Date (revised version)	Fill in latest version date.
(12)	Customer engineering approval/Approval date	Get approval of Tachi-S engineering division (when necessary)
(13)	Customer quality approval / approval date	Get approval of Tachi-S Quality section in charge.
(14)	Other approval/approval date	Fill in approval date (when necessary)
(15)	Part/Process No.	Match numbers with the Process flow chart. Circle Special characteristics process numbers. And match Process FMEA and Standard work instructions.
(16)	Process name/Detail of operation	Fill in process/work name of process flow chart.
(17)	Production machine Device/Jigs Tools	Fill in identified machines, devices, jigs, tools and so on.
(18)	No.	Fill sequence numbers for each process numbers.
(19)	Product	Describe feature or part characteristics of parts and assembly parts.
(19)	Product	



		Fill in all Special characteristics.
(20)	Process	Describe process control characteristics to achieve part characteristics.
(21)	Special characteristics	Fill in Special characteristics mark of OEM and internal Special characteristics mark.
(22)	Spec. /tolerance of product/process	Describe specs / tolerance in drawing or material standard and so on and process control characteristics value.
(23)	Evaluation/measurement Technology	Describe Evaluation/measurement method like visual check, inspection method, check device/tool and so on.
(24)	Sample Size/Frequency	Fill in 100% or frequency and sample size when sampling.
(25)	Control method	Describe Standard work instruction, Checking device. Checklist, Record method and so on.
(26)	Handling method	Describe corrective action method when non- conformance part founding.
(27)	Process Change Report control No.	Fill in Process Change Report control Number. Blank when no change.
(28)	Clear updated points	Mark revision symbol for clearing rev. points on right margin.







8	<b>TACH</b> Méxic	<b> -S</b>						~	onte	ol Pla	on ((							Approva Plant General Is		Review Quality Control		Prepared
Prototype	Mass production tri		ass production		2		Main con	tact/phone l			7	<u> </u>			Date (orig	ainal)	Date (re	evise <u>d vers</u>	ion) Li	atest Process P	Chance R	teport control
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art No./Level of	-	3					Core tear				8					r engineerin			1			12
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upplier/plant	5	Suppli	er code	6			Other ap	oroval (only	when nec	essary)	[	14			Other app	proval/appro	oval date	(only wher	nece	ssary)	[:	14
Part/	Process name	Produ	uction machine			Characteris	lics								Me	ethod					_	
Process No.	Details of operat	on D	evice/jigs		r		1		Special	haracteristics		/tolerance		ion/measurement			mple		_	Control metho	d H	landling metho
			Tools	No.		Product	Pro	ocess			of pro	duct/process	т	echnology		Size	F	requency	_		_	
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## 3) Guidance for Creating an Inspection Standard

1. Overview

In accordance with Tachi-S requirement specifications, this guidance sets forth creation and submission of an inspection standard by suppliers. This inspection standard covers inspection performed in the manufacturing processes and is not limited to inspection in the final process.

#### 2. Creating an inspection standard

(1) Form

The inspection standard form shall be any of attached forms. Select an appropriate form in accordance with the part type.

The supplier's own form, if any, may be used.

(2) How to fill out the form

For how to fill out the inspection standard, see next page.

Upon selecting inspection items and setting tolerances, quality characteristics, use the purposes of subsequent processes and take past quality problems into account.

3. Submitting an inspection standard

In principle the inspection standard shall be created in the prototyping phase and the original submitted to the applicable procurement department one month before delivery of the part.

Note that when a completed item needs to be changed due to an engineering or process change, the form shall be also revised and submitted without delay.

4. Receiving an inspection standard

The applicable quality control section shall receive the inspection standard submitted above, affix a receipt stamp, make a copy and return the original to the supplier.

5. Keeping an inspection standard

The inspection standard shall be kept as indicated in Table1.

6. Setting limit samples

If limit samples are created based on directions from the manager of an applicable Tachi-S quality control section, the necessary number of samples are created after adjusting with the quality control section, and subject to verification by the manager. One piece shall be kept by the supplier for use as a quality standard upon inspection.



Exhibit-1

### How to fill in the Inspection Standard

C8-07-05 2007.11.09

	Co-07-05 2007.11.09
Item	Description
Safety part mark	Indicate a safety part by using an applicable symbol outside the form in the upper left of the sheet. (The safety characteristics symbol designated in the drawing shall be marked.)
Receipt	Not used for products manufactured in-house. A receipt stamp is affixed if a supplier submits the inspection standard.
Model	
Part number	Shall be the same as the drawing.
Product name	
Туре	Not necessary to fill in this item.
Class	For safety part, fill in "Safety", for important part, fill in "Important" and other parts, fill in "Others", respectively.
Materials	For a unit, fill in "Assy". For a single product, fill in a material name.
Plant	Fill in a manufacturing plant (business establishment).
	* If the manufacturing plant outsourced, fill in the suppler name.
Schematic illustration	Enter a schematic illustration illustrating a shape and construction. Clarify dimension lines and inspection items with arrows.
	If the schematic illustration contains safety characteristics, use an appropriate symbol.
	( ^(CC) (sc) )
Inspection number	Indicates the order of inspection items.
Inspection item	Fill in the characteristics and a task name to be inspected.
Degree of importance	Classify items into the following three levels in accordance with the degree of importance of quality characteristics:
	(1) $^{\rm (CC)}$ : Items indicated as having safety characteristics in the drawing.
	(2) $(sc)$ : Items that significantly affect functions, performance, durability and merchantability, as well as environmentally hazardous materials.



	r
	(3) C: Items other than (1) and (2)
	$m{*}$ Use customer-designated Special Characteristic symbol when indicated
Sampling method	Fill in 100% or sampling inspection. For sampling inspection, clarify how many samples are taken out of how many lots or for how many hours.
Inspection method	Concretely describe specific inspection equipment or inspection conditions.
Decision criterion	Concretely describe specific criteria based upon which acceptance or rejection is determined.
Revision	Fill in the "Symbol", "YYMMDD", and "Revision description" fields with a
description	change number, a change date, and a revision description, respectively and affix approver's stamp. (If a supplier submits the inspection standard, the supplier shall fill in these fields.)

Note:1) The security characteristics symbols used in "Schematic illustration " and "Degree of importance" shall be those used in the drawing.

2) If a customer has some requests concerning the symbols used in "Degree of importance" (Safety parts, important function parts, and C), the request shall be taken precedence.

3) The frequency at which regular inspection data is submitted shall be entered in the "Remark" field.



### 4) Initial Product Control Guidance

1. Overview

This guidance sets forth a procedure for suppliers to contact Tachi-S upon delivery of initial products.

### 2. Initial product delivery procedure

- For prototypes, please complete the "PPSA form" attached.

- For mass production delivery of initial products, submit actual products to the receiving section of a Tachi-S plant with the attached form "Initial mass product mark sample: "Hatsumono" and initial product inspection data attached.

In case of Force Majeure reports or market conditions notified by the Seller, the Seller must provide the Buyer with a potential breakout scenario immediately (never after 5 days of notification), containing information about the deliveries, scopes according to the issued releases, inventories at the level of part number and risks that they detect.

To provide this information, Seller must fill out the "TSM Tamagury Material coverage format Supplier" to project potential breaches and actions that they must take to avoid affecting our processes. Please request this form from your contact in the Production Control area.

#### 3. How to fill in the Hatsumono form:

(1) "Code": Require to Tachi-s SQA / SQC

(2) "Model," "Part number" and "Product name"Fill in the model, part number and product name of the initial products.

The model, part number and product name of the h

(3) "Reason for initial products"

Select a reason for initial products from those in the "Note" field and fill in the number. For products subject to an engineering change, the fill in the "Engineering Change No." field in the upper left of the sheet.

(4) "Delivery date"Fill in the delivery date and quantity of initial products delivered.

(4) "Description of the change"

Simply describe the reasons for changes. Provide a schematic illustration as much as possible.

(5) Others

The "Judgment" and " Judgment comments" fields are filled in by Tachi-S.



### 4. Marking initial products

Initial products shall be indicated as such using the initial product tag (C8-05-01, Exhibit-1) designated by Tachi-S.

1	Tachi-s Im Part			Document Reference No :
er Name:	i at		Supplier Code:	
lier Plant :			Supplier personnel responsib	e for the Activity :
Name :			Control Plan Reference / Version :	
No & Issue level :			Control Plan Date :	
gn Note / DEVO :			Average Weight :	
			Tachi-s Plant :	
eston	<ul> <li>VC-Lot Trial</li> <li>PT Trial</li> <li>PT1 Trial</li> </ul>	<ul> <li>PT2 Trial</li> <li>Pre - SOP</li> <li>Process Change</li> </ul>	☐ Material Change     Details /       ☐ Design Change	Other :
ms attached	d to this Prototype F	Part Shipping Autho	rization :	
SMS				
Engineer	ring Drawings			
Design N	lote			
	pecification / Approval			
Inspectio				
	ture Diagram			
Control F				
Process	Flow Chart			
Logistics	and Packaging Data Sheet			
Process	Capability Study			
Appeara	nce Approval Report (Tachi-s	s Only)		
Project D	Development Record			
Subsupp	lier Chain Sheet			
Supplier				
Details /				
	Ouler .			
IPPLIER Sig		ach supporting document, in	ndicate the issue level and date on an attache	ed list
_				
Name _		-	Position	
Signature			Date	
	ping Authorization J	-		
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achi-s Shipp □ Author	ized 🛛 Rejected			
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For each event programmed according with final customer requirements, is necessary to send PPSA format on color sheet according with next table.

PPSA Color Table

<b>S TACHI-S</b> México	PPSA-	COLOR	TABLE	:
NISSAN	VC-LOT	PT1	PT2	FVC

<b>A TACHI-S</b> México	PPSA-0	COLOR TA	BLE
AKI SEAT	TSB	тто	PP

<b>S TACHI-S</b> México		PP	SA-COL	OR TABLE		
ΤΟΥΟΤΑ	WRINKLE ZERO	TRAINING	PRE- LVPT	APPEREANCE REVIEW	LVPT	HPVT

S TACHI-S México								
<b>S TACHI-S</b> México		<b>PPSA-COLOR TABLE</b>						
HONDA	DAN-0	PV TEST	DAN 1	QC	RC			

S TACHI-S México	PPSA-COLOR TABLE					
CAOEM	B1	B2	RC1	RC2	PILOT 1	PILOT 2

NOTE: For projects that were defined color previously to this Supplier Quality Manual review, take colors according with previous agreement.



CODE: DATE PART No.: NAMEMODEL:				
FIRST PRODUCT				
CIRCLE THE CAUSE OF FIRST PRODUCT				
1. NEW ORDER				
2.DESIGN CHANGE				
3. PROCESS CHANGE				
4. PROTOTYPE.				
5. INSTRUCTION OF ( )				
CHANGE DESCRIPTION:				
ENGINEERING CHANGE SHIPMENT DATETRIM No SUPPLIER:				
INDUSTRIA DE ASIENTO SUPERIOR, S.A.				



1. Overview

This guidance sets forth a method for assigning a lot number to Tachi-S designated safety and important parts.

- 2. How to display a lot number
  - [1] Lot controlled parts
  - (1) A sequence consisting of numbers and alphabets with no more than 7 digits
  - (2) Order of display
    - (i) Year: Use the last number of the year

- (Ex) 1995 → 5
- (ii) Month: 1-9, X, Y and Z are used to indicate months from January to December

(Ex) January  $\rightarrow$  1, November  $\rightarrow$  Y

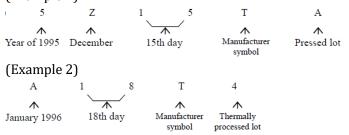
(iii) Day: 01 - 31 or 1 - 31 are used to indicate 1st to 31st days of a month.

(Ex) 15th day  $\rightarrow$  15

(iv) Others: Can be used by part manufactures at their own discretion. Note if indicating [1] and [2] is difficult, one letter indication of year and month is also acceptable.

(3) Display examples

(Example 1)



[2] Individually controlled parts

(1) A 7-digit sequence consisting of numbers and alphabets

(2) Order of display

(i) Line number: 0-9 are used to express a manufacturing line number.

(Ex) Line  $4 \rightarrow 4$ 

(ii) Month: 1-9, X, Y and Z are used to indicate months from January to December

(Ex) December  $\rightarrow$  Z

(iii) Production sequence number:

A five-digit number is used. Returns to "00001" at the start of each month.

(3) Display examples

4	Z	12003
$\uparrow$	$\uparrow$	$\uparrow$
Line 4	December	Production sequence number