RUCHA

ENGINEERING EXCELLENCE

SQM (SUPPLIER QUALITY MANUAL)

MANUAL ISSUE NO	:	02
DATE	:	Sep 1st, 2022
TOTAL NO. OF PAGES	:	71 Pages Annexures (A to Y) & Audit Check sheets (Separate Copy)
REVIEWED & APPROVED	:	Chief People Officer (CPO) Sourcing (DH)
ISSUED BY	:	SYS. CO.

CORPORATE OFFICE :
RUCHA ENGINEERS PVT LTD PLANT 1
K-249, M.I.D.C. AREA,
Waluj, Aurangabad – 431 136
Maharashtra, India.

FOREWORD

We consider our suppliers as an integral part of REPL Quality system. This manual explains the Quality System expectations of REPL from its Suppliers.

The main purpose of this manual is to develop and monitor suppliers performance in meeting the REPL QMS requirements and subsequently targeted towards QMS standard upgradation from ISO 9001:2015 to IATF 16949:2016 certification.

By working with those suppliers who can fulfill the Quality System requirements set forth in this manual, the materials supplied to REPL are expected to be of superior in Quality, Absolute Value and Responsiveness to End Customer. This will help REPL to achieve their fundamental objective of Customer Satisfaction.

U. M. Dashrathi
Managing Director
Rucha Engineers Pvt. Ltd. Group

0 Revision History

Rev. No.	Date	Modified	Drafted By	Checked & Reviewed By	Approved By
02	01.09.2022	SQM revision with Quality, Safety, Engineering & Audit requirement with CSRs consideration in documented information	SYS.CO. GBN	SYS. HEAD KAH	CPO/CCO RCM SOURCING (DH) PMR
01	01.02.2020	Initial SQM revision	SYS.CO. AAG	SYS. HEAD RCM	SOURCING (DH) PMR

1. Abbreviations & Definitions

1.1 Abbreviations

Abbreviation	Authorised use as
REPL	Rucha Engineers Pvt Ltd
APQP	Advanced Product Quality Planning
AIAG	Automotive Industry Action Group
BOM	Bill Of Material
PPAP	Production Part Approval Process
PSW	Part Submission Warrant
SPC	Statistical Process Control
SQM	Supplier Quality Manual
FMEA	Failure Mode Effect Analysis
Cp/ Cpk	Capability Index
RFQ	Request For Quotation
NC	Non-Conformity
NPD	New Product Development
PFMEA	Process Failure Mode Effect Analysis
IRS	Inward Reliability System
DOL	Direct Online
SIR	Sample Inspection Report
PDIR	Pre-Dispatch Inspection Report
VDA	Verband der Automobilindustrie
SPM	Supplier Performance Monitoring
COC	Code Of Conduct
QMS	Quality Management System
RPN	Risk Priority Number
SPC	Statistical Process Control

Abbreviation	Authorised use as
MSA	Measurement System Analysis
TPM	Total Productive Maintenance
NDA	Non-Disclosure Agreement
RMTC	Raw Material Testing Certificate
QA	Quality Assurance

1.1 Glossary of Terms & Definitions

Supplier: A business or Organization that provides their own products, raw material or processes or services to REPL supplied Assemblies or REPL assets.

Quality: The totality of features and characteristics of a product or service that bear on its ability to satisfy given needs…**As per American Society of Quality (ASQ)**

Purchased Parts: All component parts and materials that a supplier procures from its sub-suppliers in order to produce products to be delivered to REPL

Supplier (Tier 1 Supplier): A first tier supplier to REPL who receives orders for parts directly from REPL.

Sub-Supplier (Tier 2 and beyond): A service provider whom a supplier purchases parts from and outsource services to such as fabrication, testing, etc., and including those who beyond the first service provider, it is collectively referred to as sub-suppliers.

REPL-owned property: When necessary, after consulting with the supplier, REPL will lend machines, dies, tools and jigs, etc. needed to manufacture parts, etc.

Storage: The act of organizing frequently used documents in a manner that allows fast retrieval during daily business operations.

Retention: The act of preserving less-frequently-used documents (including electronic medium) in a location such as archive and stockroom outside the worksite in a manner that allows prompt retrieval when needed

Important Safety Parts: Important safety parts set forth in Part Drawing and as per REPLs Customer Requirement

Important Quality Characteristics or Special Characteristics: Important Quality or special characteristics as per part drawing, REPL requirement such as Safety, Function, Fitment, Aesthetic

Limit Sample: A sample of parts which demonstrates quality limits for conformance or nonconformance.

Sustainability: Sustainability consists of fulfilling the needs of current generations without compromising the needs of future generations, while ensuring a balance between economic growth, environmental care and social well-being.

TPM: Total in TPM means ''Total Involvement'' from Top Management to Shop floor personnel. TPM is not optional, everyone has to participate for it to work.

Terms & Definitions (Please Ref to IATF 16949:2016 Clause No. 03)

2 Introduction to RGI Supplier Quality Manual (SQM)

2.1 Purpose

REPL believes itself as a company with excellent practices which guaranteeing the maximum satisfaction of its customers. In order to gain and maintain this objective, the role of the suppliers or vendor partners is fundamental.

This document defines the requirements and working procedures intended to assist suppliers in achieving and maintaining successful business relations with REPL group. SQM guides to establish and build the "**Zero Defect**" objectives through Defect Prevention, Continual Improvement & Reduction of variation & waste in supply chain.

2.2 Scope

This SQM (Supplier Quality Manual) is applicable to all the suppliers and contactors who are providing the any BOP part, Raw Material, Product (Sub-assembly or Assembly) or Service to REPL. This is mandatory to comply all the related requirements mentioned in this document.

2.3 Expectations

The products, parts, or services must be compliant with the Purchase Order, Drawing technical specifications and general norms sign with supplier.

The suppliers are obliged to compliance in terms of capacity, capability and process controls. Supplier must follow Quality Management System requirement and have QMS certification as per required by REPL.

The Supplier shall follow the document retention period as define by REPL. Moreover, have resources, which should carried out an effective and efficient analysis on problem and handling corrective actions as per defined methodology.

2.4 How to use this document

The target of this document is to synthesize and communicate our suppliers towards REPL quality and safety requirements to ensure the quality of supplied parts.

The latest valid version of this Supplier Quality Manual is available on REPL website **www.ruchagroup.com/Manufacturing Expertise/Suppliers/SQM**

Important: Suppliers shall retain this SQM readily available at their manufacturing locations all the time. It shall be provided to REPL representative as and when required.

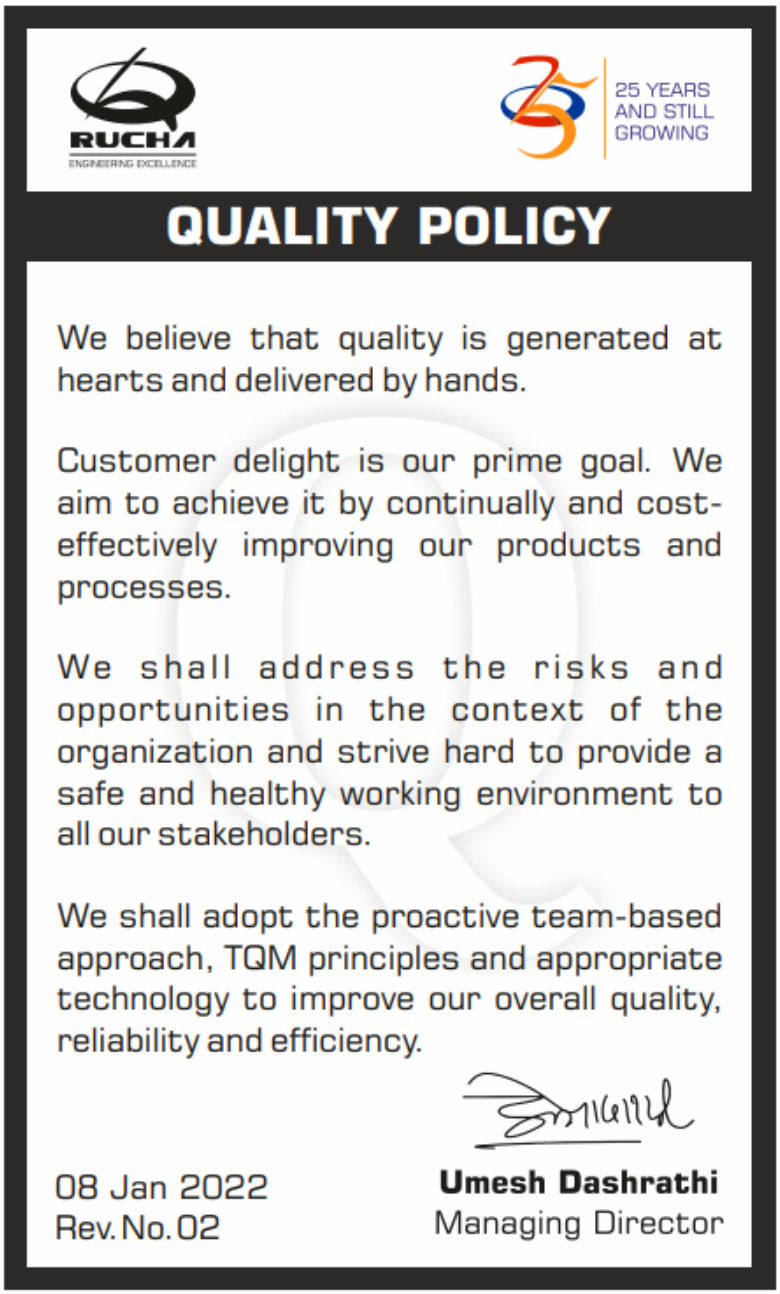
Supplier is solely responsible for retaining latest revision of this manual.

To confirm latest revision of this manual, visit REPL website time to time.

3 REPL Policies

3.1 Quality Policy

We have declared our Quality policy in Supplier COC REPL/COC/2018-19/VER1.0. REPL believe that supplier shall follow the Quality policy to improve their organization. Quality policy states,



RUCHA ENGINEERING EXCELLENCE

25 YEARS AND STILL GROWING

QUALITY POLICY

We believe that quality is generated at hearts and delivered by hands.

Customer delight is our prime goal. We aim to achieve it by continually and cost-effectively improving our products and processes.

We shall address the risks and opportunities in the context of the organization and strive hard to provide a safe and healthy working environment to all our stakeholders.

We shall adopt the proactive team-based approach, TQM principles and appropriate technology to improve our overall quality, reliability and efficiency.

08 Jan 2022
Rev. No. 02

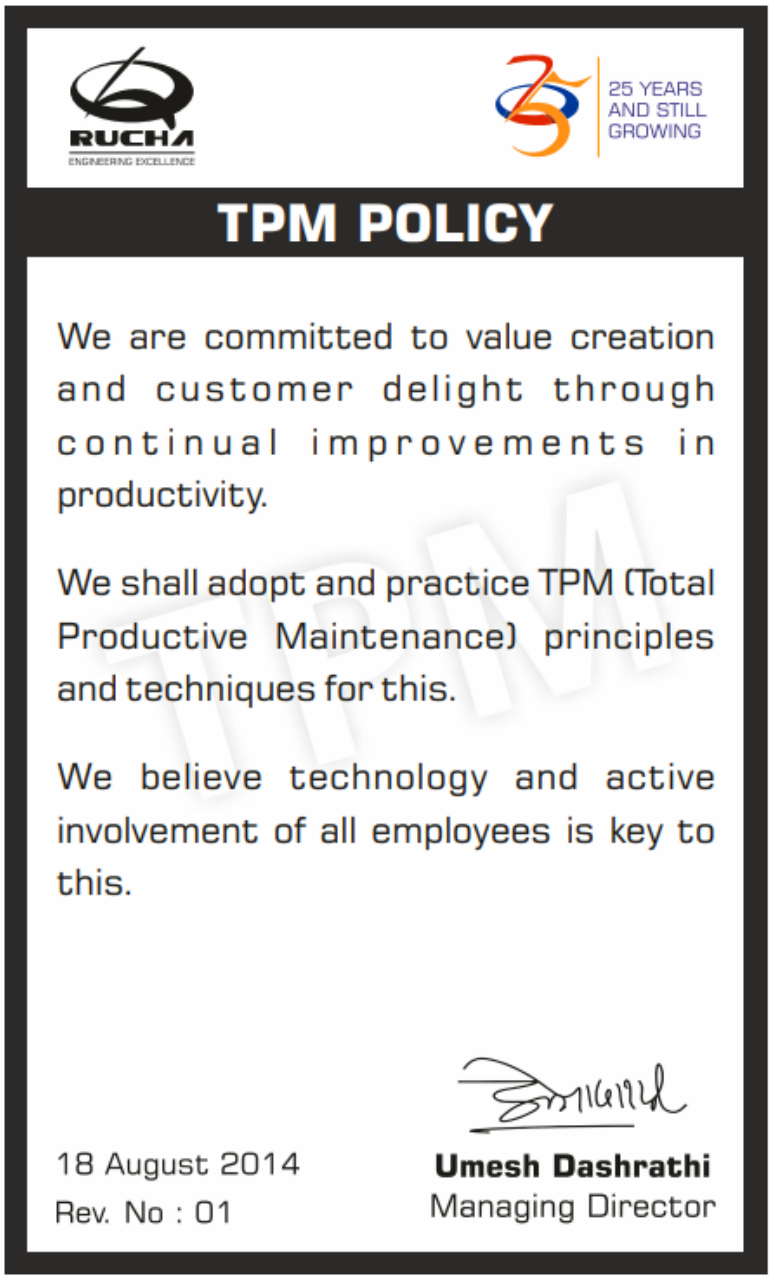
Umesh Dashrathi
Managing Director

3.2 Environmental Health and Safety (EHS) Policy

We believe the Environmental Health and Safety is important to contribute to Ecofriendly processes and hazard waste management. Supplier should follow the EHS Policy in (Annexure X) Supplier COC REPL/COC/2018-19/VER1.0 and declare about use of any processes or substances which is said to be hazardous as per EHS guidelines.
EHS Policy states,

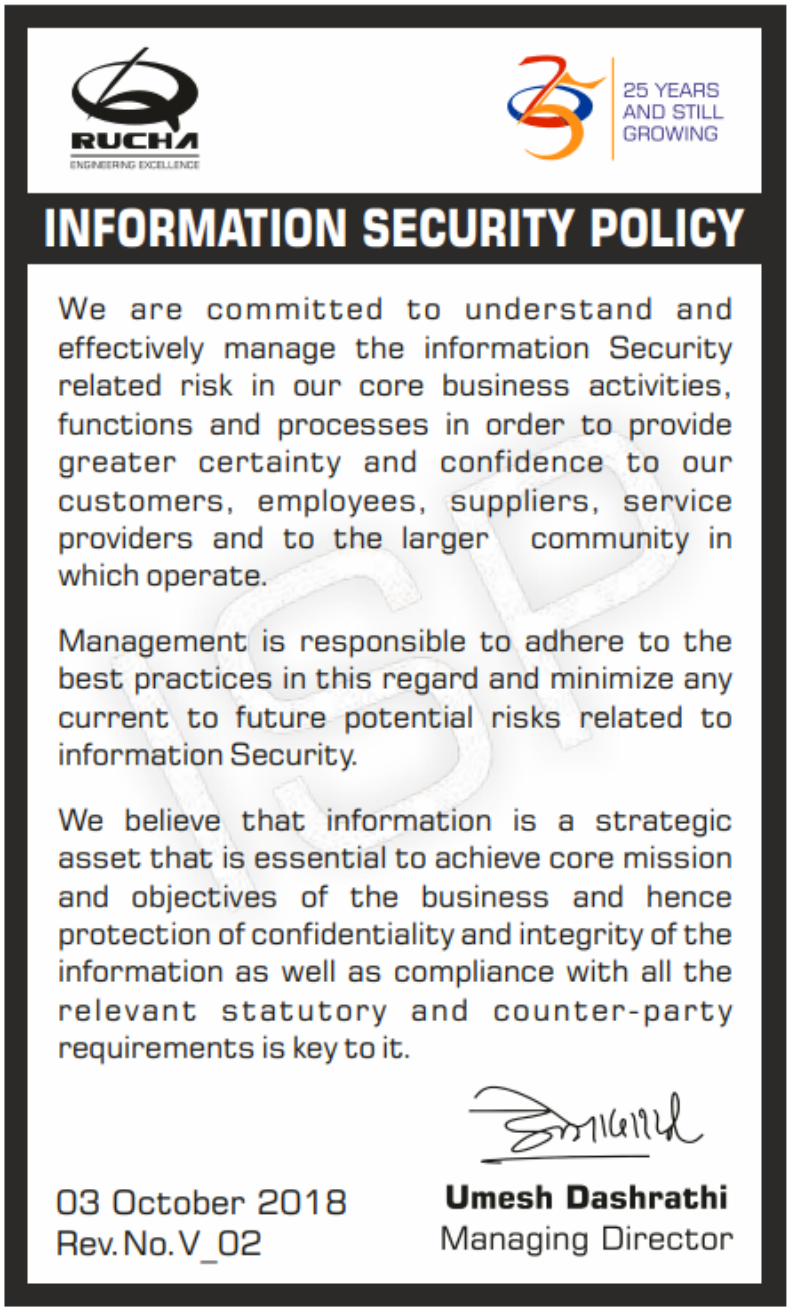
3.3 TPM Policy

Supplier who are supplying the BAL, TML parts those should follow TPM Policy of (Annexure X Supplier COC REPL/COC/2018-19/VER1.0) We believe this will upgrade the working environment and improve handling to fulfill the CSR requirements.
TPM policy states,



3.4 Information Security Policy

Supplier should follow the requirements of Information security to maintain confidentiality for legal and technical documents like legal agreements, technical drawings, mail communications. Supplier should adopt the policy as in Annexure X Supplier COC REPL/COC/2018-19/VER1.0.
Information Security Policy states,



RUCHA ENGINEERING EXCELLENCE

25 YEARS AND STILL GROWING

INFORMATION SECURITY POLICY

We are committed to understand and effectively manage the information Security related risk in our core business activities, functions and processes in order to provide greater certainty and confidence to our customers, employees, suppliers, service providers and to the larger community in which operate.

Management is responsible to adhere to the best practices in this regard and minimize any current to future potential risks related to information Security.

We believe that information is a strategic asset that is essential to achieve core mission and objectives of the business and hence protection of confidentiality and integrity of the information as well as compliance with all the relevant statutory and counter-party requirements is key to it.

03 October 2018
Rev. No. V_02

Umesh Dashrathi
Managing Director

3.5 Corporate Social Responsibility (CSR) Policy

Policy is intended to focus company's effort to make difference among local community and direct necessary collaboration.
Objectives of CSR Policy
a) We are part of the society and it is our duty and responsibility to give back to the society at large for its direct & indirect, tangible & intangible, known & unknown contribution in our business.
b) It is intended to drive company's efforts that go beyond what may be required by regulators or environmental protection groups.
c) Also it is about setting culture of thinking beyond incurred short-term costs that do not provide an immediate financial benefit to the company, but instead promote positive social and environmental change.
d) With obligation to adhere applicable CSR laws we are majorly concern about following causes:
i) Community development
ii) Education and skill development
iii) Environmental sustainability including water and sanitation, green energy, afforestation
iv) Humanitarian response

3.6 Labor and Human Right Policy

Supplier shall ensure Freedom of Association, Anti-Discrimination, and Fair Treatment to all its employees.
Working Hours, Rest Days, Wages and Benefits shall be as per Govt. rules and regulations. Suppliers shall ensure that no underage labor (less than 18 years) has been employed in the production or distribution of their goods or Services

3.7 Sustainable Procurement Policy

3.7.1 Scope

The Policy is intended to focus on company's efforts in sustainable procurement for Labour practices, human rights and environmental issues. We believe in joint venture of all the parts of supply chain to creating responsible and ethical sustainable supply chains to bring together positive and sustainable change.

3.7.2 Sustainable Procurement

REPL is embedded in our core purpose to make better and safer place by bringing Quality, Safety, and Sustainability to life. We are deeply committed to operating with integrity and pursuing our corporate social responsibility activities living our strong values.
We believe that the suppliers are important part to play in contributing to our sustainability. We have strong agenda on sourcing responsibly and ensuring our supply chain operated responsibly so that to improve lives of our workers, their communities and environment to contribute to human rights. Our Policy designed to set out principles how the employees managing supplier relationships and the minimum standard behaviors of all the suppliers that we work with. We are guided by REPL Code of Conduct, employment, social security, social policy, human rights and Environmental policy.

In accordance with our commitment to the highest standards, we expect that our suppliers aspire to the same standard in their business operations including but not limited to:

1) Environment
2) Human Rights and Labour
3) Business Ethics
4) Community development

1) Environment

REPL expects that the suppliers should adhere to the all the applicable environmental laws and regulations. REPL aims at making the environmental friendly and responsible supply chain. We accept that the scope and nature of operations of our suppliers vary and hence emphasis on respective principles will be vary.

- Comply and adhere to all the applicable laws in respective countries/jurisdiction
- Undertaken initiatives to promote the greater environmental responsibilities such as:

a) Responsible waste management and disposal
b) Reduction of CO_2e and GHG emissions harmful to the environment
c) Use of Green resources and conservation of non-renewable resources

a) Responsible waste management and disposal

i) Minimum Waste to landfills

The waste to landfills should be segregated and analyzed so that there will be mixing of toxic or hazardous substances into the general landfills. Suppliers should take target to reduce the quantity of disposal to landfills. Supplier should follow the principles like reduce, reuse and recycle along with alternate disposal methods to reduce impact to the environment.
REPL has defined detail SOP for disposal management in REPL/SOURCING PROCESS MANUAL/2021-22/REV1.0/39

ii) Reusable Packaging methods

Suppliers should develop the reusable packaging methods where it is possible to use. Also, care to be taken that the used packaging materials should be easily disposable and there should be no any major harm to environment. If any packaging material having major harm to environment after disposable that should be communicated by supplier as a prior responsibility towards eco-friendly supply chain.

iii) Disposable of toxic waste

Suppliers should declare the use of any toxic waste produced in any processes. Toxic waste should be handled with professional guidelines and authorized waste processor. There should be care to be taken so that the wastage should not dispose to outside without prior approvals.

b) Reduction of CO_2e and GHG emissions harmful to the environment

Suppliers should declare their sources of emissions for emissions like CO_2e, Green House Gases, SO_X, NO_X and particular matters.
Suppliers should expect to take innovative efforts towards the reducing these emissions

Also there should be need to find out the opportunities to reduce the use of water so that to implement the water conservation practices.

c) Use of Green resources and conservation of non-renewable resources

i) Green Resources (Renewable sources)
REPL recommend and motivate to the suppliers to use renewable resources of energy to become more energy efficient and independent. Suppliers should identify the efficient and sustainable energy sources to be used as an alternate source to conventional sources.
ii) Adopting green initiatives
Suppliers should follow environment friendly practices to minimize and monitor the environmental impact. Suppliers should inculcate such practices in their operations and start the new opportunities to reduce impact on environment.

2) Human Rights and Labor

Comply with all the applicable laws in accordance with principles of Labor authorities of India.

Supplier should aware that there should be prohibition of slavery and use of forced, bonded or child labor across the supply chain. In addition, there must be prohibition of lawful discrimination and harassment to provide a safe and inclusive work environment.
REPL expects supplier should respect the human rights of people and communities. Suppliers should ensure they should have qualified or skilled people in friendly work environment to build strong supply chain.

a) No Child Labor
Suppliers must ensure child labors should not use anywhere in supply chain or internal processes. There should be work instruction related to prohibition of child labor align with Govt. laws and policy.

b) Labor wages and working
Supplier must ensure that wages should meet the mandated minimum without any unauthorized deduction prior information to worker.

c) Employment terms and conditions
Workers and employee should be provided with clear terms and conditions in the language understood by them. Suppliers should ensure that the working hours and wages should be defined in accordance with local regulations and industrial practices.

d) Discrimination and harassment
REPL does not discriminate or permit discrimination by any Employee against any individual based on race, color, religion, belief, national origin, sex, sexual orientation, gender identity, gender expression, parental status, marital status, age, disability, health, citizenship, trade union activity, political affiliation, veteran status, or genetic information in matters of employment or services or in the activities, it operates.
Harassment, whether verbal, physical, or visual, that is based on any of these characteristics is a form of discrimination. This includes harassing conduct affecting tangible job benefits, interfering unreasonably with an individual's work performance, or

creating what a reasonable person would perceive is an intimidating, hostile, or offensive environment.

e) Health and Safety

Suppliers should adhere to environmentally safe and healthy working. There should be compliance of all the laws and regulations defined by Govt. and local authorities for health and safety. Suppliers should conduct the health and safety related training to the employees.
Suppliers should take reasonable actions to prevent accident and injuries to minimize the possibility of ant risk incidents.

f) Conflicts of Materials

Suppliers should define policy or SOP for conflicts of materials if any. Suppliers should declare the list conflict materials in supply chain or their internal processes and ensure that there should be no exposure in any way into the environment.

3) Business Ethics

REPL believe in to conduct the business activities in fair an transparent manner with respect to honor dignity and sanctity, urge strive for innovation and excellence, confidence for welcome and embrace change, honesty to stand for truth and transparency and ambition to strong drive for growth. REPL expects from suppliers to follow these ethics to grow as a leading organization in their commodities.
Supplier should obey all the laws and regulations complied with highest professional and ethical practices, which are included in supply chain.

a) Anti-Money laundering

REPL committed to complying fully with all applicable Anti-Money laundering laws in the conduct of our businesses. The purpose of this anti-money laundering policy is to prevent any involvement by our company in money laundering activity even where the involvement is unintentional. Supplier should follow the laws for money laundering, ''The Prevention of Money Laundering Act, 2002 ("PMLA") along with the Prevention of Money Laundering (Maintenance of Records) Rules, 2005 ("Rules")''
Our suppliers must only deal with reputable parties involved in legitimate business activities and whose funds are derived from legitimate sources. There should be action to be taken for any non-compliance if found anywhere.

b) Anti-bribery and anti-corruption

Suppliers must not engage in or tolerate any forms of bribery, corruption, extortion or embezzlement. REPL expects that supplier should respects all the applicable laws concerning corruption and ensuring adequate procedures in place to prevent any corruptions across the supply chain and internal processes of suppliers.

c) Confidentiality

Suppliers should follow the confidentiality for all the data contains technical specification, drawings, communications with REPL and all the sensitive information related to REPL. Supplier should comply to the Non-Disclosure Agreement (Annexure B- 2) signed with REPL for confidentiality.

d) Data retention

Suppliers should persist and retain all the data for supplying parts as per norms given by REPL. In addition, the data should be accessible only to the authorized person of supplier organization and it can be made available on demand of REPL.
Supplier should ensure that the data must be secure place to maintain in proper conditions until the retention periods, especially for higher retention period data.

e) Conflicts of interest

Suppliers are expected to give information for conflict of interest in any business with REPL so that we are able to take prior actions on the same. It should note that the supplier should report if any employee or professional in contract with us might have any ownership or interest in supplier's business.
Supplier must take every possible effort to avoid such occurrences of situations that creates a conflict of interest within the scope of their business relationship.

f) Sanctions

Suppliers must ensure that they fully comply with applicable sanction regimes within their supply chain. Moreover, there should be precaution to be taken to do not transact with sanction regimes i.e. being countries, individual or entities. REPL expects to avoid such transactions; supplier should adopt control processes to ensure the compliance with such sanction regimes.

g) Gifts and Hospitality

Suppliers should take that there must be no gifts, entertainment, cash or cash equivalents to REPL employees or representative. Hospitality such as social events, meals or entertainments may be offered if there is legitimate purpose involved within the reasonable cost limits.

h) Fair Competition and restrictive supply practices

Suppliers must follow the laws defined by local authority and industry practices for fair competition to get business by competitive prices, innovative and highly flexible processes to withstand for quality requirements. Suppliers must ensure that no one representing their organization should not participate in price fixing, market or customer allocation or market sharing with our competitors.

4) Community Development

REPL understand that procurement performance improvement depends on various factors, it is continual improvement process, and we recognize the contribution of our suppliers to

become more sustainable.
REPL believes to take steps to collaborate and associate with our communities by giving employment, support to reduce poverty and develop skills of people. We will develop the awareness to our communities by arranging the seminars, forums and commodity-based programs having sustainability content.
Our community development practices includes:

- Provision of living wages at minimum to the employees or workers
- To collaborate and associate with the business partners or suppliers to improve the education, culture, social wellbeing of communities in which they operates.
- Provision of awareness programs so that they will adhere to the laws and regulations given by local authorities and industrial authorities.

3.3 Supplier Code of Conduct

Supplier should acknowledge the RUCHA Code of Conduct REPL/COC/2018-19/VER1.0 (Annexure X) for supplier and taken necessary orientation to understand code of conduct. Also, acknowledge that as a RUCHA's supplier, supplier must strictly adhere not only to supply contract but also to the applicable guidelines, terms and relevant organization policies described therein.
Further, acknowledge that, code has effectively communicated to our employees and all stakeholders.
Besides this, supplier should agree to co-operate with any type of audits to be conducted by RUCHA or third party for ensuring compliance.
Supplier must understand that it is our utmost responsibility to report RUCHA about a violation, or a potential violation of the Code of Conduct to maintaining the high ethical standards.

Supplier Code of Conduct includes below guidelines:

a) Our Values

RESPECT – Honor Dignity and Sanctity
URGE – Strive for Innovation and Excellence
CONFIDENCE – Welcome and Embrace Change
HONESTY – Stand for Truth and Transparency
AMBITION – Strong Drive for Growth

b) Our Commitment
I) Quality Policy
II) EHS Policy
III) TPM Policy
IV) Information Security Policy

c) Equal Opportunity Employer
d) Work Ethics
e) Workplace Confidentiality
f) Administrating the Code
g) Hierarchy of documented requirements
I) Purchase Orders/Supplier Contracts

II) Engineering Drawings/Component technical Specifications

Supplier Quality Manual (SQM) Standard

REPL expects the highest standards of ethical conduct in all of our endeavors. Supplier shall always be ethical in every aspect of its business, including relationships, practices, sourcing, and operations:

a. Business Integrity

Supplier shall not engage in corruption, extortion, embezzlement, or bribery to obtain an unfair or improper advantage. A supplier must promptly report to REPL Sourcing Department if it believes that someone working at or for REPL (whether or not a REPL employee) has committed an illegal or dishonest act, or an act that causes, or is substantially likely to cause, harm to people or property or company 3 reputation or suspected violations of this code.

b. Human Rights

Supplier shall ensure Freedom of Association and Anti-Discrimination and Fair Treatment to all its employees. Working Hours, Rest Days, Wages and Benefits shall be as per Govt. rules and regulations.

Suppliers shall ensure that no underage labor (less than 18 years) has been employed in the production or distribution of their goods or Services.

c. Working Environment

Suppliers shall ensure that all workers receive communication and training on emergency planning and safe work practices.

In addition, suppliers shall have systems to prevent, detect and respond to potential risks to the safety, health and security of all employees.

d. Environment Protection

Supplier shall implement a systematic approach to identify, manage, reduce, and responsibly dispose of or recycle hazardous substance.

Supplier shall implement a systematic approach to identify, control, and reduce water, noise and other kind of pollutions produced by its operations.

Note: - REPL will assess its suppliers' compliance with this Code, and any violations of this Code may jeopardize the supplier's business relationship with REPL, up to and including termination.

4 Supplier Management Guidelines

4.1 Supplier Selection Criteria

New Supplier Selection is carried out mainly due to below requirements:

a) New Customer requirement

b) Poor Performance of existing supplier prior to Quality and Delivery

c) Management decision due to some commercial and statutory requirements

d) Improvement objective related to supply chain management

e.g., Localization

According to the Customer Specific Requirements, there are different processes and different requirements from every OEM Customer. Supplier must comply with the requirements given by OEM Customer for compliance of all CSRs.

Also Supplier must comply to the QMS requirement, technical requirement, EHS requirements and CSR (Corporate Social Responsibility) requirements.

The procedure for selecting the Supplier as mentioned below:

a) Supplier shall be Customer Approved OR

b) Supplier shall be IATF certified OR fulfill Customer Specific QMS requirement OR

c) Supplier shall have plan for IATF certification & ready to follow RGI quality systems & full fill RGI requirements & follow EHS guidelines given by RGI

d) In case of RGI proposed supplier, Potential Analysis audit is to be conducted as per Customer Specific Requirement & It should be done by Certified Auditor w.r.t Annexure A & Decision of selection to be taken as per rating criteria.

e) In case of Raw material suppliers, criteria for selection shall be either Customer Approved or Internal approval by QA or RGI records. All test reports, certificates and NABL lab reports shall be evaluated

f) In case of consumables and spare items, RGI group company's records shall be referred

g) All commercial aspects as per RGI guidelines and Functional head decision will be final

h) Quality, Delivery and Cost shall be major elements for supplier selection

i) If Supplier selected as per all above guideline, then Supplier shall submit their details as per Vendor Registration Form' for Vendor code creation in SAP and add into the RGI approved or Customer Approved Supplier List and Sign NDA (Annexure B-2) with Supplier

***4.1.1 Annexure A: Customer Requirements for Supplier Selection Criteria

S. N.	Customer Name	Standard Guidelines to be follow	QMS Certification requirement	Audit Requirement				
				Potential/ New Supplier selection & Assessment	Project Audit Requirement	Process Audit Requirement	Auditor Requirement	Problem Analysis method
1	Bajaj Auto Ltd (BAL)	QMS Guidelines ; EHS Guidelines	ISO 9001:2015	20 Basic Q System Audit TPM Audit IPO Audit	-	R&R AUDIT Process Audit; Projection Audit; SSW Audit; MIG Audit;	ISO/IATF Certified Auditor	6W2H/ 4 Step Action
2	TMPVL TACO	MSA Guidelines ; QMS Guidelines ; EHS Guidelines	ISO 9001:2015 / IATF 16949:2016	MSA Audit	-	Process Audit; System Audit; QMS Audit	IATF Certified Auditor	8D Analysis
3	SAVWI	VDA Guidelines	IATF 16949:2016	VDA6.3 Potential Audit	2DP Audit	VDA6.3 Process Audit; VDA6.5 Product Audit	IATF/VDA Certified Auditor	8D Analysis
4	PSA	IATF Guidelines ; MMOG/LE	IATF 16949:2016	NSA Audit	PCPA Audit CQI Audit	QSB+ Audit	IATF/VDA Certified Auditor	8D Analysis
5	TVSM	QMS Guidelines ; EHS Guidelines	ISO 9001:2015	QMS Audit	SPTR Audit	SPTR Audit	IATF Certified Auditor	6W1H/3W 1H/ 8D Analysis
6	Comm Scope India Pvt Ltd	Supplier Management Guidelines	ISO 9001:2015	*Supplier Sustainability Survey; *Supplier Risk Assessment	Supplier Technical Assessment		Subject Matter Expert/IATF/VDA certified Auditor	8D Analysis

Annexure A includes the CSR for all the OEM Customers. Supplier must follow the requirements related to QMS, Audit, Auditor Authority and Problem analysis method that should be followed for all related parts.

4.2 Sourcing Management Process

4.2.1) Supplier Approval

Supplier should be approved only after comply to Supplier Selection Criteria (SQM Sec 4.1) and compliance of all the requirements mentioned in Annexure A will be mandatory for further process like sampling, prototyping, etc.

4.2.2) Supplier Qualification

Once the approved supplier must be qualified for specific Raw material, part or commodity.
Supplier must follow the Supplier Development Procedure REPL/QSP/21 Rev.02 (Annexure A -1) for all the requirements until the start of SOP. To determine the supplier capabilities in several competencies would include, but limited to Supplier On-site Audit, APQP/PPAP, Risk Management, so on.

4.2.3) Customer Directed (Approved) Sources

As specified by REPL contracts, the supplier shall purchase or service for fasteners, all types plating, all type of coating, raw materials, standard parts or special commodity products from approved sources.
The use of Customer approved source relieves only for selection and development of parts or service, remaining all the responsibility like quality and performance of source should be of supplier only.
In any case, where supplier cannot fix the issue, REPL should be informed to support fixing the issue.

4.3 Supplier Performance Monitoring (SPM)

Supplier performance management (SPM) is a REPL business practice that is used to measure, analyze, and improve the performance of a supplier.
Suppliers will be monitored on monthly basis to assess their performance by evaluating Supplier Performance Rating, which is calculated with consideration of criteria 60% quality rating and 40% delivery rating.
Supplier will be received month wise report from REPL and asked for analysis report as per Annexure A. Supplier should revert with the analysis within next 1-2 working days. Supplier has to sign off quality target agreement (Annexure A -2) on yearly basis based on their previous year PPM as a milestone.
For Supplier Performance Monitoring Annexure A – 3) To follow:
a) Supplier Rating should be monitor on the daily basis of Quality and Delivery
b) Give more importance to Quality Rating i.e., 60% & 40% to delivery
Rating = 0.6*Quality Rating + 0.4*Delivery Rating
c) While monitoring Quality Rating give more importance for Customer complaint and Field Failure for that take rejection Qty as 10 times that of actual Customer Complaint (Rejection Qty in Nos) and Field Failure (Rejection Qty in Nos.)
d) Take Line Rejection and Inward rejection Qty (In Nos) as it is
e) Calculated Rejection Qty (In Nos) = Inward Rejection Qty (In Nos) + Line Rejection Qty (In Nos) + (Customer Complaint - Rejection Qty in nos * 10) + (Field Failure – Rejection Qty in nos * 10)
f) OK Qty Supplied = Total Qty Supplied - Calculated Rejection Qty
g) Quality Rating = (OK Qty Supplied/Total Qty Supplied) *100

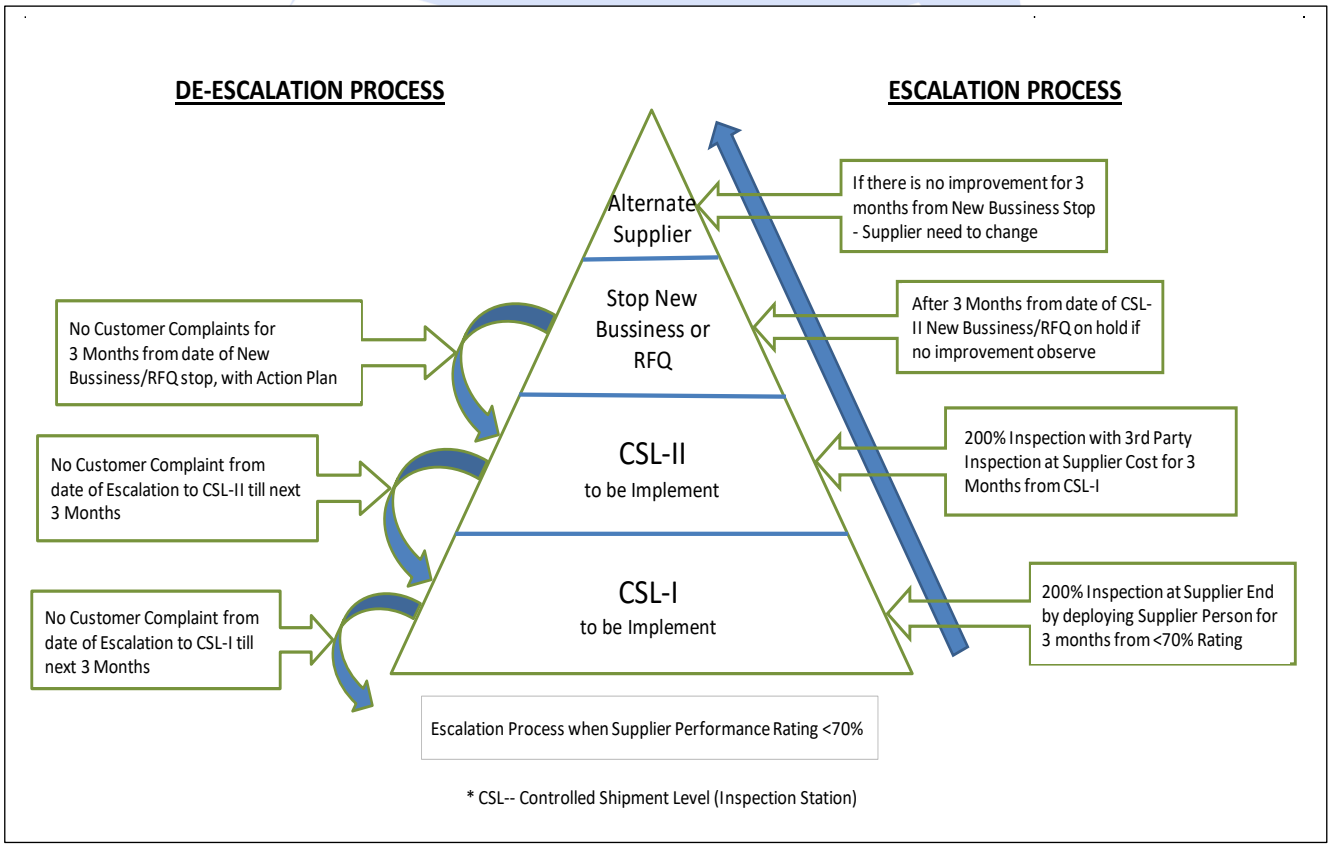
h) For Delivery rating reduce 20 points from actual Delivery rating for 1 Hr line stoppage and in multiple for more time span
i) Hence Formula to be apply for Quality and Delivery rating
Delivery rating = (OK Supplied Qty/Scheduled Qty) *100
j) Supplier Performance Rating = (0.6*Quality Rating + 0.4*Delivery Rating)
k) Action w.r.t, Supplier Performance Rating:
a) < 70% - **Severe** - If Supplier is consistently below 70%, Take action for immediate improvement & if rating Remains below 70% for continues three months, plan for alternative Arrangement.....*Follow* ***Escalation Process (Annexure A-4)***
b) 71% - 85% - **Satisfactory** - Try to bring R > 85% level
c) 86% - 90% - **Good** - Scope for Improvement
d) 91% -100% - **Excellent** – Sustain

* **Note**: **Give best supplier award if supplier is having excellent rating for consecutive three months.**

4.3.1) Escalation Process

Suppliers have repetitively lower Supplier performance rating need to follow Escalation Process (Annexure A-4)

The procedure for escalation & de-escalation process is as shown below in pyramid diagram:



4.3.2) Controlled Shipping

It is demand of REPL QA process in which supplier put an Inspection station after their 100% inspection station. This is required to avoid the dispatch of non-conforming parts to REPL.

This Inspection station is addition to the running inspection stations. The implementation of Controlled Shipping carried out as per mentioned in Escalation Process (Annexure A-4).
Two stations that REPL has consider for Controlled shipping level (CSL) are as mentioned below:
a) CSL-I: Inspection station with skilled supplier inspector addition to normal control inspection station. Here we require 200% inspection with Inspection commitment marking.
b) CSL-II: Inspection station with 3rd party inspector addition to CSL-I. Here we require 200% along with 3rd party inspection with the same inspection commitment marking.
Implementation criteria for Controlled Shipping as mentioned below:
a) Repetitive Quality Issues
b) Repetitively below 70% Supplier performance Rating
c) Major disruptions
d) Quality concerns at Customer End
Exit criteria for Controlled Shipping as mentioned below:
a) Three months of data from implementation of corrective actions, if controls effective in discrepancy identified then it can take from CSL-II to CSL-I to normal control each after 3 months data.
b) Supplier has to submit the below list of documents to exit CSL station
1) 8D Action plan with proper Containment action, Root Cause analysis, Systematic Corrective action
2) Revised PPAP Documents (Control plan, FMEA, PFD etc.)
3) Sample Inspection Report (QA Head, Plant Head Sign off & approved only)
4) Pres-Dispatch Inspection report (PDIR) (QA Head, Plant Head Sign off & approved only)
5) In process inspection report for all the batches in the period of CSL stages.

4.3.3) Supplier Termination Process

Supplier should follow the Escalation Process (Annexure A -4) if any repetitive quality issues or major disruptions.
The process explains the Escalation and de-escalation process. As per the REPL policy if supplier fails in de-escalation process then REPL may take prior termination process from specific project or business continuity with REPL group.

4.3.3) Penalty Clauses

Supplier should be considered for debit or penalty if any complaint receives from OEM customer due to the supplying parts or raw material. Also supplier must be responsible for any line losses happens in REPL lines due to supplying parts or raw material as per policy defined by REPL group.

Following are REPL penalty norms to the Supplier against:

I) Audit rating:

Self-audit to be conducted at supplier end to sustain “Excellent” supplier rating & to achieve ‘A’ rating

- 1st Audit to be conducted in next 15 days after schedule given to supplier and after on-site audit guide supplier for NC closure and to achieve 'A' rating
- In 2nd Audit (After 1 month of 1st audit) if not achieving 'A' rating: Penalty of Rs. 10,000 to be raised.
- 3rd time repeat If 'B' rating: Penalty of Rs. 25,000 to be raised
- 4th time repeat If 'C' rating: Penalty of Rs. 50,000 to be raised with SOB reduction
- Audit rating downgrading from 'B' to 'C' or 'A' to 'B': Penalty of Rs. 25,000 to be raised.

Note: If any Debit from Customer for Audit NC due to Supplier, Will be passed on to Supplier.

II) Lot rejection or receipt stage:

- Additional 10% of Invoice amount to be debited

III) In-process (Line) rejection at REPL after rework / segregation:

- Additional 15% of invoice amount of rejected components to be debited

IV) REPL Product Scrapped due to BOP part or Raw material quality issue:

- Total cost of Final Product to be debited as per customer debit invoice amount.

V) 'Q' issue raised due to bypass of defined system :

- Penalty of Rs. 25000 to Rs. 1 lac to be raised according to severity of the 'Q'-issue

4.4 Supplier System Development

REPL have a faith in system of Vendor partners and to support for the development of supplier end QMS for the objective of conforming to REPL policies and the same supply the BOP parts or Raw Material to REPL group with stated technical specifications along with reference Inspection document record only.

Ensure that all suppliers of BOP & raw materials who are supplying their materials to REPL Group Plants shall be ISO 9001:2015 or later plan for IATF 16949:2016 certification & should be share the timeline to REPL within 30 days after contract sign off or first lot dispatch to REPL.

For SAVWI or Stellantis (PSA Group or FCA) customer of REPL Group plants suppliers shall be IATF 16949:2016 certified.

All suppliers shall be EHS management system certified to ISO 14001:2015 & ISO 45001:2018.

Identify the approved supplier for Raw material, bought out product as well as job work supplier for developing systems as their end and maintain a list of such suppliers in "Assessment Schedule of Suppliers"

Note: Such Suppliers whose rating is poor and whose products are prioritized for the supplier quality system development first for ISO 9001 upgradation and later for IATF 16949
Decide the frequency of system assessment to be carried out and update the same in "Assessment schedule of supplier"
Note-1- Conduct supplier audit at least once in a year based on supplier rating.
Note-2 - If the supplier audit score is not as per the criteria, action plan to be taken from supplier within max 30 days.

Select and qualify auditors for supplier audit based on the supplier criteria:
Education: Graduate / Diploma in engineering
Experience: 5 year of industrial experience and 3 years experience in QA department
Competency: IQA Certified to QMS Std ISO 9001:2015 & IATF 16949:2016 & VDA 6.3 certified
Skills: Audit planning, execution, communication & reporting, process knowledge to be audited, understanding customer specific requirements and organizations own requirements

Second-party auditor shall be competent to the:
I) Understanding of the automotive process approach for auditing, including risk-based thinking;
II) Applicable customer & organization specific requirements;
III) Applicable ISO 9001& IATF 16949 requirements related to the scope of the audit;
IV) Applicable manufacturing process(es) to be audited, including PFMEA & control plan
V) Applicable core tool requirements related to the scope of audit;
VI) Knowledge of Product, Process, Defects & related measurement;
VII) Understanding of applicable Customer Specific Requirements (CSRs);
VIII) Executing a minimum min. 2 nos of audits/ year;
IX) Use of applicable measuring instruments (Veriner caliper, Point Micrometer, Height gauge etc);
X) Understanding how to plan, conduct, report and close out audit findings

Maintain "Supplier System Audit Check list (i.e Check points)" as per requirements including specific contract agreement and handover the same to the assessment team.

Assess the suppliers as per check points given in "Supplier System Audit Check List" as Ref Doc REPL/QA/F-05 (Annexure - B)

Assess the suppliers as per check points given in "Supplier CSR & Sustainability Audit check sheet" as Ref Doc REPL/SOURC/F-18. (Annexure B -1)

Examine the report and decide the area / activity where the systems need to be established and get the action plan from the suppliers and after the job is completed, handover the same to the HOD-QA and Sourcing/ purchase/ Vendor Development (VD).

Send the observation to the supplier for taking necessary actions at their end, if required

In case in assistance is required by the supplier provide the same through visits / correspondence, as applicable

Assign the personnel from the assessment team after the target date for follow - up audit as mentioned in the same system audit check list.

During the audits, promote the suppliers to monitor their performance efficiency and indicators

Get system assessment on supplier site carried out as and when required and after receipt of the observations, discuss regularly the status of the supplier with head (QA)

4.5 Supplier Audit Requirement

REPL have a supplier audit requirement as per below details:

I) Supplier QMS Audit Methodology:

- REPL's auditor will visit at suppliers' site (s) to assess and verify suppliers' Quality management system and its conformance to REPL QMS requirements. Audit plan will be communicated to supplier well in advance.
- Audit will be conducted as per check sheet in a prescribed format. Findings of audit such as observations, areas of improvements and non-conformance to requirements will be communicated to supplier at the end of audit.
- Non-conformance to requirement will be taken to raise Corrective Action Request (CAR). Supplier shall submit corrective action plan for Non-conformance raised during audit. Time duration necessary to implement corrective actions will be decided by REPL only.
- Supplier must take steps to plan and implement corrective actions proposed in CAR. Implementation of corrective actions will be reviewed and verified by REPL. CAR raised will be closed by REPL when corrective actions / corrective action impact implemented and found effective.
- If supplier has implemented and certified its Quality Management System during course of time OR already having Certification as per ISO 9001/ IATF 16949:2016, REPL will not audit that supplier to verify conformance for QMS.

Scoring Criteria: for Annexure M – SQMS Checklist.

0 - Does not meet requirement / not in practice.
1 - Practice evidenced – step improvement required.
2 - Just meeting requirements – improvement required.
3 - System is in place meeting RUCHA requirement with effective implementation

$$\text{AUDIT SCORE:} = \frac{\text{(Points scored)}}{\text{(Applicable points)}} \times 100$$

- Response and commitment shown by supplier will be considered while evaluating performance of supplier.
- Submission of CA is required, when score is less than 75%

(Pl. fined annexure D to L for your reference and use)

- Part Drawing supplied by REPL or in house developed.

ANNEXURE – C

Refer for Part Submission Warrant (PSW)

ANNEXURE – D

Refer Control Plan or QCPC

ANNEXURE – E

Refer (Deviation Note) Deviation Request Note

ANNEXURE – F

Refer CAPA by supplier

ANNEXURE – G

Refer Supplier PDIR

ANNEXURE – H

Refer REPL format No.: F-PR-08 for Inward Inspection Report or ERP

ANNEXURE – I

Refer REPL format No.: F-MAI-007 for In-process Inspection Report

ANNEXURE – J

Refer REPL format No.: LS-PRD-09 for List of Instruments for Calibration

ANNEXURE – K

Refer REPL format No.: F-MAI-015 for Control of Non-conforming products & its Effectiveness

ANNEXURE – L

Refer REPL format No.: LS-PRD-06 for Status Identification Chart.

ANNEXURE – M

Refer REPL format No.: LS-MAT-06 for SQMS Checklist

ANNEXURE – N

Refer REPL format No.: F-ENG-11 for Process Flow Diagram

ANNEXURE – O

Refer REPL format No.: F-ENG-07 for PFMEA

ANNEXURE – P

Refer REPL format No.: F-ENG-09 for Sample Inspection Report

ANNEXURE – Q & Q-1 to Q-3

Refer REPL format No.: F-MAI-05 & GL-MAI-04 for SPC

ANNEXURE – R & R-1 to R-3

Refer REPL format No.: GL-MAI-03 for MSA

ANNEXURE – S

Refer REPL format No.: F-ENG-17 for ECN

ANNEXURE – T

Refer REPL format No.: F-ENG-20 for List of Checking Aid

ANNEXURE – U

Refer REPL Tool Buyoff

ANNEXURE – V

Refer REPL Gauges handover to Supplier

ANNEXURE – W

Refer REPL Contract Review Checklist

ANNEXURE – X

Refer REPL Supplier COC

ANNEXURE – W

Refer REPL Raw Material Specific Requirements

4.5.1 Supplier Potential Audits

REPL conduct the Supplier potential audit on site with reference to REPL QMS & Customer Specific Requirements related to Supplier Selection Criteria/ Audit Requirement (Annexure A) as mentioned in Supplier Audit requirement in Section no.4 Supplier selection criteria

Supplier shall be qualify the below potential audits -

1. 20 Basic Q System Audit
2. QMS Audit
3. TPM Audit
4. IPO Audit
5. MSA Audit
6. NSA Audit
7. VDA 6.3 potential audit
8. Supplier Sustainability & Supplier Risk assessment

Note: Refer the Supplier Audit requirement table mentioned in Section no. 4 (Annex A)

4.5.2 Supplier Project Stage Audits

Suppliers shall be ready for Project stage audits & must be qualify as per given below -

1. 2DP Audit
2. PCPA Audit, CQI Audit
3. SPTR Audit
4. Supplier Technical Assessment

Note: Refer the Supplier Audit requirement table mentioned in Section no. 4 (Annex A)

4.5.3 Supplier Process Audits

Suppliers shall be ready for process audits as per given below for –

1. R&R audit, Process audit
2. Projection welding Audit
3. SSW Audit
4. MIG Welding Audit
5. SPOT welding audit
6. Process Audit, System audit
7. QMS Audit
8. VDA 6.3 Process audit
9. VDA 6.5 Product audit
10. QSB+ Audit
11. SPTR Audit

Note: Refer the Supplier Audit requirement table mentioned in Section no. 4 (Annex A)

4.5.4 Special Process Audit

The goal of the Special Process Initiative is the reduction of campaigns, spills, recalls and warranty claims related to components from "Special Processes." The Special Process Initiative is comprised of individual work groups that develop assessments based on best practices and designed to provide a means of continual improvement, emphasizing defect prevention and reduction of variation and waste in the supply chain.

The benefits of using special process audits for your special processes include:

- Assesses an suppliers ability to meet REPL requirements
- Align expectations between suppliers and REPL
- Reduces waste, variation, and defects in final product of REPL
- Increase REPL satisfaction

Special processes those come under as below table so Audit will be conduct by REPL with followed self -audit by supplier:

***(Supplier Special Process Audit Requirement Annexure A - 5)**

S N	Process Name	Process Applicable - Yes / No	Applicable Audit Points	Max Possible Score	Actual Audit Score	Score in %	Remarks
1	Aluminium Die Casting						
2	Aluminium Machining Process						
3	Cast Iron						
4	Hot & Cold Forging						
5	Steel Machining						
6	Plastic & Injection Moulding						
7	Rubber & Injection Moulding						
8	Pressing						
9	Welding						
10	Painting / Coating (ED)						
11	Plating Process (Metal)						
12	Heat Treatment						
13	Anodizing						
14	Assembly Process						
15	Electronics Parts Process						
16	Electrical Parts						
17	Others (Specify)						

4.5.5 EHS & OHS&MS Evaluation

Supplier shabby be evaluate as per below defined criteria –

4.5.5.1 Environment Health Safety (EHS)

1. Is your plant certified to " ISO 14000:2015" standard? Please attach copy of certificate.
2. Do you have valid consent to operate from State Pollution Control Board ?
3. If yes, show copy of the consent.
4. If no, reason for the same and committed date to have it.
5. Do you meet environment related requirements of factory act ?
6. If no, reasons for the same and stipulated date when compliance will be effected.
7. Do you use hazardous chemicals in your company ?
8. If yes, provide names & quantities.
9. What type of hazardous processes and hazardous wastes generated from your Company ?
10. Do you have system for receipt, storage, handling and disposal Chemicals
11. Hazardous wastes and Hazardous. Give details :
12. Have you trained your employees with respect for receipt / storage/ handling / disposal of hazardous wastes / chemicals provide the details :
13. Have you taken any project to reduce consumption of natural resources such as power, water oil, wood, paper etc give the details :

4.5.5.2 Occupational Health, Safety & Management System (OHS&MS)

1. Is your plant certified to " ISO 45001:2018" standard? Please attach copy of certificate.
2. Do you have documented Occupational Health & Safety Policy? Is it displayed in your premises? Are employees aware of the policy? Please attach copy.
3. What are the Safety training programmes for your employees-Accident prevention, Firefighting etc.
4. What safety precautions are taken in design & layout of manufacturing processes, locations & the practices to prevent the injuries and ill health at the work place.
5. Do you have proper lightening & ventilation arrangements in you premises.
6. Do you have clean & safe drinking water facilities at necessary workplaces
7. Do you conducting regular safety meetings in your organization
8. Are your employees using the Personal Protective Equipment (PPE) like Safety shoes, Hand gloves, safety goggles, welding screen … etc. wherever necessary.
9. Do you maintain well equipped " First Aid Box" in different work areas in your premises.
10. What are the documented Safe Working Procedures used by your employees? Pls. attach a copy of each.

****Supplier can Refer the (Annexure B-4) for Self-Evaluation for EHS & OHSAS.**

5. REPL Requirement

5.1 REPL General Requirements

Suppliers must establish a QMS (Quality Management System) as per requirements given in this manual.
REPL will carry out periodical assessments of supplier quality system to verify conformance as per the manual. The supplier shall take a timely corrective action on the discrepancies reported through audit / performance assessment / customer disruption which will be subsequently verified by REPL.

5.2 Quality Management System

Supplier shall have a documented quality system and agree to onsite assessments.

In addition, REPL expects suppliers to work towards the goal of achieving compliance to the latest IATF 16949:2016 standard.

Supplier shall have documented quality systems as per IATF requirements. As REPL initiative, REPL may demand its supplier quality management system up-gradation from ISO: 9001 to IATF 16949:2016.
• All 10 clauses are to be implemented. ISO 9001:2015 certification is minimum requirement for all REPL suppliers. However, REPL may demand IATF 16949:2016 certification from its suppliers if any customer demands for the same.

***__NOTE:__ In case of SAVWI customer all suppliers must be IATF 16949:2016 certified.**

5.2.1 ISO 9001:2015 Requirement

All suppliers shall be QMS ISO 9001:2015 certified from authorized certification body only and well implemented all the 10 clauses with documented information.

5.2.2 IATF 16949:2016 Requirement

Supplier shall have documented quality systems as per IATF requirements. As REPL initiative & REPL customers requirement, REPL may demand its supplier quality management system up-gradation from ISO 9001:2015 to IATF 16949:2016 so supplier shall be ready for IATF 16949:2016 certification.

- All 10 clauses shall be well implemented & documented -

1. Scope
2. Normative Reference
3. Terms & Definition
4. Context of the organization
5. Leadership commitment
6. Planning
7. Support
8. Operation
9. Performance Evaluation
10. Improvement

- Risk Assessment & Mitigation Plan
- List of Internal issues and external issues with proper mitigation plan
- Contingency plan

Etc. are few major points to be focused during transition phase.

5.3 Supplier CSR & Sustainability Audit Requirements:

Supplier CSR & Sustainability self audit shall be done with below specified points –

1. Organization – Working & Management
2. Employer – Policies & Practices
3. CSR Specific requirements
4. Health & Safety
5. Environment
6. Labor & Human Right

1.Organization – Working & Management

Supplier shall have a social sustainability responsible management representative & CSR & sustainability for environment & social

Supplier shall have a functional team & plan on CSR integrated with human resource, business ethics, communication, environmental management & community development

Suppliers shall have First Aid Provisions with valid medicines & visiting doctor facility

Supplier shall have a training plan & documented records for training on CSR awareness & Sustainability to employees and workers

Supplier shall have a legal document & its compliance

Supplier shall have firefighting equipment – location, validity & records must be retain on REPL request

Supplier shall avoid hazardous material in process lithium, Zink, gold, silver, cyanide
if used in process - procedure for disposal and authorized person having knowledge of disposal

Supplier shall have a sustainability road map

Supplier shall have Code of Conducts - sign with REPL & COC for sub-suppliers

2.Employer-Policies & practices

Supplier shall have an Employee satisfaction survey, feedback and action plan on survey

Supplier shall have Working hours and wages policy for employee - minimum wages to be paid as defined by local authorities or industrial practices

Supplier shall have consent from MPCB - applicable for the processes like plating, coating, heat treatment, analyzing etc.

Supplier shall have Electrical Power Station from Sanctioning authorities

3. CSR Specific requirements

Supplier shall have Objectives to defined for CSR for employee and senior leaders

Supplier shall have any budget plan and resource deployment in annual budgetary for CSR

Supplier shall have review committee of CSR & Sustainability progress

Supplier shall have identified specific communities. How should company identified the competencies,

Supplier shall have capacities and technologies to fulfill need of these communities

4. Health & Safety

Supplier shall have Certification for ISO 45001:2018 for Occupational Health and Safety System
Supplier shall have Health and Safety Committee - composition, minutes of meeting, frequency of meeting, etc
Supplier shall have Accidents and basic safety - reportable or non-reportable incidents recorded with action plan

***__**NOTE**__: Any accident happened in the company premises that should be informed to MD of the organization within 5 minutes to 10 minutes.

Supplier shall have appropriately ***Escalation Matrix** at every level as if required.
Supplier shall have the appropriate controls in place to manage risk from moving machinery like guards, interlocks, lock-out etc
Supplier shall have appropriately implementation & its testing frequency for a fire and other emergency (sprinklers, fire extinguisher, alarms, drills, etc)

5. Environment

Supplier shall have certification of ISO 14001:2015 for Environmental Management System - Certificate, validity, scope
Supplier shall have meet their water effluent consent - BOD/COD, pH, SS, Oil etc.
Supplier shall have Water consumptions for last financial year and initiatives taken for reduction of use.
Supplier shall have Water reuse, recycle, reduce plan or any project done independently or combined with any business partners
Supplier shall have Power factor improvement procedure and plan
Supplier shall have company significant energy user & options of energy efficiency improvement
Supplier shall have the records of any air emission consent - key parameter testing for SOx, NOx, Particular matter.
Supplier shall have Organization procedure for waste management - identification of waste types, generation data, analysis and disposal
Supplier shall have Waste management for hazardous substances - list of hazardous substance, storage, disposal procedure
Supplier shall have Procedure for proper storage of hazardous elements - chemicals MSDS, TDS

6. Labor & Human Rights

Supplier shall have ensure basic wage level is higher than the minimum wage for unskilled workers - any premium rate for overtime
Supplier shall have average monthly overtime within the limits set by local authorities and industrial regulations
Supplier shall have awareness training records to the workers regarding the working conditions - induction training plan, training report
Suppliers shall have Company policy and record for discrimination and sexual harassment

****Note: Supplier can refer Annexure B-1 for Supplier CSR & Sustainability Audit check sheet**

Below mentioned is the scoring method for Supplier CRS & Sustainability Audit

SCORING METHOD		
Scoring Criteria	**Level**	**Remarks**
Obtained Score >80	Level 5	Sustain - Supplier is capable having good practices
Obtained Score <= 80	Level 4	Very Good. Work for Sustenance - Supplier is capable
Obtained Score <= 65	Level 3	Good. Scope for Improvement - Supplier is capable
Obtained Score <= 45	Level 2	Average. Supplier is conditionally approved
Obtained Score <= 20	Level 1	Supplier is not capable

5.4 EHS & OHSAS Requirements from REPL Supplier

All supplier shall be ISO 14001:2015 & ISO 45001:2018 certified or plan for EHS & OHSAS certification within 30 days after getting business from REPL Group.

All 10 clauses shall be implemented with documented information.

5.4 1 Disposal of Hazardous Waste

5.4.1.1 SCOPE

The following items / materials are included in the hazardous segment:

- E-waste including bulbs, tube lights, electrical cables and wires
- Coolants
- Sludge (ETP water)
- Wastage oil / machine oil
- Empty chemical cans
- Wastage cotton hand glove

5.4.1.2 OBJECTIVE

- To identify hazardous waste generated due to various production / manufacturing activities.
- Dispose-off the hazardous waste efficiently without contaminating the surroundings

5.4.1.3 STANDARD OPERATING PROCEDURE

1. The process starts at the beginning of every month. The user will get an estimate of the waste generated (for each item mentioned in the list above) at each business area through resp. plant heads or process owners

3. The supplier shall prepare a PIV (Provisional Inventory Verification) note and seek approval from respective suppliers MD to make provision of the given hazardous waste in the ERP system.
4. Supplier MD shall review the PIV and provide approval to the user. As per the approval, a provision

stock of the hazardous waste shall be updated on the ERP system

5. Once the provisional stock is updated in the system, supplier shall check the stock status of each waste on the system

6. Depending on the item / material of hazardous waste the quotation shall be acquired from the government approved hazardous waste customers. The rate provided in fixed by the government and should not be negotiated

7. The rate for each waste shall be updated on the system and simultaneously the vehicle to be planned to load and dispose-off the waste

8. When the vehicle arrives at the designated business area, the weight of the empty vehicle shall be checked and noted & register the record.

9. The vehicle shall be loaded with the waste and the weight shall be again checked and to be noted. The gross weight of the scraps shall be determined by subtracting weight of loaded vehicle and weight of empty vehicle.

10. As per the weight and rate of waste, the invoice shall be generated by the supplier end and vehicle released from the business area of suppliers.

11. The process shall be repeated for each of the waste as mentioned under the list of hazardous waste (Annexure Z List of Hazardous Waste as mentioned)

Supplier shall be identify the hazard condition or waste area wise and shall be done risk assessment with proper mitigation plan as per EHS & OHSAS standard.

Supplier shall maintain HIRA register and mitigation plan.

Supplier shall have their updated EMS Escalation Matrix & that is sign off & approved by Suppliers Plant Head.

5.4.2 Emergency Preparedness & Response:

Supplier shall:

a] prepare to respond by planning actious to prevent or mitigate adverse environmental impacts from emergency situations
b) respond to actual emergency situations
c) take action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact
d) periodically test the planned response actions, where practicable
e) periodically review and revise the process[es] and planned response actions, in particular after the occurrence of emergency situations or tests
f) provide relevant information and training related to emergency preparedness and response, as appropriate, to relevant interested parties, including persons working under its control.

5.5 PFMEA Requirements:

5.5.1 Guideline on Process Failure Mode Analysis (PFMEA)

1. Purpose: To outline the system for FMEA to assure that to the extent possible potential failure mode and their associated actions / mechanisms have been carried and corrective / preventive actions are taken.

2. Scope: Engineering and New Product Development.

3. Responsibility: CFT (Supplier End)

4. Procedure:

A) Process Flow Chart: Process flow chart shall be completed for the associated processes for that part.

B) Special Characteristics are selected as per work instruction for special characteristics.

C) FMEA: Before preparing FMEA, Risk Assessment may be done. Rejection details and customer complaints will be referred also.

D) Process FMEA:
a) Process Function Requirement:
Write process description in brief as referred in process flow diagram.
Write process and product requirements

b) Potential Failure Mode:
Write the manner in which the product or process may fail to met the requirements
e.g. Undersize, oversize, out of squareness, out of Parallelism
e.g. Low strength, high strength, low mold hardness, low casting hardness.

Inputs are assumed as correct e.g. Raw material, Castings, Machines condition.

c) Potential Effect of Failure:

Write the effects of failure on next operation, subsequent processing, customer end, user, statutory /regulatory compliance e.g. Assembly problem, not fitting in next jig, loose, tight.

d) **Severity (S):** Refer severity ranking table in SQM Sec 5.5 Guideline on "FMEA"

e) Potential causes/ Mechanisms of failure:
write the extent possible assignable cause for each failure mode by using techniques like cause effect diagram, why-why analysis, brain storming.
f) **Occurrence (O):** Occurrence is how frequently the specific failure cause/mechanism is projected to occur.
This will be decided by using rejection data / records. Refer occurrence table in FMEA manual for given ranking number.

g) **Current process control:**
Current process controls are descriptions of the controls that either present to the extent possible the failure mode from occurring or detect the failure mode should it occur.

- e.g. fixture error- proofing.
- Set up approval
- SPC charts
- Stage inspection.

There are three types of process control/ features to consider i.e.

1. Prevent the cause / mechanism or failure mode/ effect from occurring reproducing the rate of occurrence.
2. Detect the cause / mechanism and lead to corrective actions.
3. Detect the failure mode.

h) Detection (D): Refer table of detection ranking given in the FMEA manual.
Detection is an assessment of the probability that the current process control detects a potential cause and mechanism of failure mode.

i) **Risk Priority Number:**
RPN= (S) * (O) * (D)

1) Calculate separate RPN with Respect to severity/ occurrence /detection Ranking.

Criteria For Recommended Action:

2) **RPN cut off limit is 99**

For higher RPN numbers team must undertake efforts to reduce the RPN through corrective/preventive actions.

****NOTE**: Special attention should be given when severity is more than "7". In case if RPN is low & sev is high (7to10) then also it is necessary to initiate action.

j) Recommended actions to reduce RPN: (For detail refer below Recommended actions to reduce RPN)

- Think of mistake proofing
- Think of DOE/ SPC
- Operator Instructions/ Training.
- Online / visual controls.
- Control Plans revision.

• **Improve Detection**
This approach is typically describe only in the short run. It often reduces but does not eliminate defects.
Examples include product inspection systems like…Camera system for part inspection etc.
Successive Check Systems: Operators inspect input from previous process prior to performing work. This is time consuming but promote objectively.

Self-Check Systems: Each operator 100% inspects for defect prior to sending parts to the next

operation. This is less time consuming than other inspection systems but suffers from judgment errors due to familiarity

• **Reduce or Eliminate Occurrence**
While this approach may more costly in the short run, it is usually more cost effective and desirable in the long run. Various approaches include…

Product Redesign: Design the product so that the defect either cannot occur or is very unlikely to occur.
Process Redesign: Design the process so that the defect either can not occur or is very unlikely to occur. This often involves such things as changes in tooling or the elimination or simplification of process steps.

Error proofing Inspection Systems: These systems rely on the error being discovered and eliminated before it becomes a defect by the application of a control function at the point where the defecs originates. Regulatory methods reduce occurrence while other methods eliminate occurrence.

• **Error Proofing Control Functions**
Regulatory Control Methods: Stop the operation and prevent the occurrence of serial defects.
Regulatory Warning Methods: Alert the operator to a process abnormality by using a sensory device.

Contact Methods: Detect abnormalities in a product's shape or dimension by using sensing devices. Examples include…

Parts that will only load in machines or fixtures correctly.

- Parts that will only load in machines or fixtures correctly.
- Templates for assembly
- Sensors to detect the presence or a component feature
- Limit switches and machine stops

Fixed Value Method: Detect abnormalities by checking for a specified number of motions, a specific weight, etc.

Motion Step Methods: Detect abnormalities by checking for deviation in required motion

• **Determining Actions**

Developing recommended actions is a creative process. Team members should be free to brainstorm various suggestions without fear of having to conform. Generally, a recommended action should provide a solution to the "cause of failure." If a course of action as not clear, the team can conduct a designed experiment to systematically study various options suggested by team members. REPL suggests studying and providing recommended actions to reduce RPN's for each failure mode. We believe world - class companies will adopt this strategy on their path to zero defects. Actions must be verified to ensure that they were correct and effective. An FMEA without follow-up is worthless.

k) Resulting RPN :
Review PFMEA for actions taken and reduction in RPN periodically depending upon the corrective / preventive actions stated & follow up. The details of review may be recorded on back page of FMEA/

through minutes of meeting.

l) DFMEA Review (If Applicable)

1. Review meeting includes Engineering & Development, Manufacturing, Production, PPC, Store & Logistics, Purchase, Quality and Marketing (CFT)
2. Meeting frequency as & when required
3. Consider feasibility of manufacturing, assembling, testing, packaging & transportation / shipping to customer.
4. Consider manufacturing concerns which include material type, material hardness, Tooling Vs Quantity, process controls tolerances & capability of tooling
5. Consider assembly concerns – standardization, tool clearance adjustments, fits, process controls, operator fatigue.
6. Consider Inspection / Testing Concerns – special equipment or MMD. Fixtures & Jigs Calibration, what & how to measure.
7. Consider Packaging concerns- Weight, cost, special handling equipment, operator safety, shipping standards, of industry / given by customer.
8. Consider Shipping concerns – Method of shipment expenses
9. Consider review of critical characteristics.

m) PFMEA Review

1. Review meeting with CFT members as required.
2. Consider Potential process problems, product failures and Audit requirements
3. Consider critical characteristics which results into serious consequences
4. Consider special control for special processes
5. Consider process capability analysis
6. Consider Environmental issues, Process and Special characteristics
7. Consider Approval process for new processes and equipment

All suppliers shall refer below format of **Annexure O PFMEA for the Failure Mode Effect Analysis (PFMEA) REPL/ED/F-07 Rev No.02**

For Risk Priority Number (RPN) refer the below Severity (S) ranking table, Occurrence (O) ranking & Detection (D) ranking table.

5.5.2 PFMEA (Process Failure Mode Analysis)

Refer below PFMEA format for Process Failure Mode Analysis.

RUCHA	PFMEA (Potential Failure Mode & Effect Analyis)	Format No: REPL/EDC/F-07 Rev No: 02 Rev Date: 01.02.2021

Customer Name:	Supplier Name:	PFMEA Number :
Item/Part Name/Description:	Process Responsibility:	Page: of
Part No./Mod No.:	Key Date:	Prepared By :
Core Team:	Model Year(s)Program(s):	FMEA Date (Org.):
	Rev. No.:	Rev. Date:

Process Step / Function	Requirement	Potential Failure Model	Potential Effect(s) of Failure	Seveity	Classification	Potential cause(s) of Failure Mode	Current Process				RPN	Recommended Action	Responsibility & Target Completion Date	Action Results				
							Controls Prevention	Occurrence	Controls Detection	Detection				Actions Taken Completion Date	Severity	Occurrence	Detection	RPN
Prepared By:						Approved By:												

5.5.3 Guideline on S, O & D Ranking System:

a. Guideline On Severity (S) Ranking Table:

Effect	Criteria: Severity of effect on product (Customer Effect)	Rank	Effect	Criteria: Severity of Effect on process (Manufacturing/Assembly Effect)
Failure to meet safety and/or Regulatory Requirements	Potential failure mode affects safe vehicle operation and/or involves noncompliance with government regulation without warning	10	Failure to meet safety and/or Regulatory Requirements	May endanger operator (Machine or assembly) without warning
	Potential failure mode affects safe vehicle operation and/or involves noncompliance with government regulation with warning	9		Emissions (OBD II) item, Regulatory item
Loss or Degradation of Primary Function	Loss of primary function (Vehicle inoperable, does not affect safe vehicle operation)	8	Major Disruption	100% of product may have to be scrapped. Line shutdown or stop ship
	Degradation of primary function (Vehicle operable, but at reduced level of performance)	7	Significant Disruption	A portion of the product run may have to be scrapped. Deviation form primary process including decreased line speed or added manpower
Loss or Degradation of Secondary Function	Loss of secondary function (Vehicle operable, but comfort/convenience functions inoperable)	6	Moderate Disruption	100% of production run may have to be reworked offline and accepted
	Degradation of secondary function (Vehicle operable, but comfort / convenience functions at reduced level of performance)	5		A portion of the production run may have to be reworked offline and accepted

Annoyance	Appearance or Audible noise, vehicle operable, item does not conform and noticed by many customers (>75%)	4	Moderate Disruption	100% of production run may have to be reworked in-station before it is processed
	Appearance or Audible noise, vehicle operable, item does not conform and noticed by many customers (50%)	3		A portion of the production run may have to be reworked in-station before it is processed
	Appearance or Audible Noise, vehicle operable, item does not conform and noticed by discriminating customers (<25%)	2	Minor Disruption	Slight inconvenience to process, operation or operator
No Effect	No discernible effect	1	No Effect	No discernible effect

b. Likelihood/ Occurrence (O) ranking table:

Likelihood of Failure	Criteria: Occurrence of Cause – PFMEA (Incidents per items / vehicles)	Rank
Very High	≥ 100 per thousand ≥ 1 in 10	10
High	50 per thousand 1 in 20	9
	20 per thousand 1 in 50	8
	10 per thousand 1 in 100	7
Moderate	2 per thousand 1 in 500	6
	0.5 per thousand 1 in 2,000	5
	0.1 per thousand 1 in 10,000	4
Low	0.01 per thousand 1 in 100,000	3
	≤ 0.001 per thousand 1 in 1,000,000	2
Very Low	Failure is eliminated through preventive control	1

c. Detection (D) Ranking Table:

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

5.6 Suppliers Important Safety Parts

5.6.1 Overview

1. REPL specifies Important safety parts with drawings (specifications included).
2. Suppliers recognize "Important safety parts" designated by REPL in respective part drawing or reference to REPL CSRs.

5.6.2 Requirements

The supplier shall confirm special characteristics, which are specifically selected from Important safety parts and Important quality characteristics

a. Review of specification

The supplier shall confirm Important safety parts and Important quality characteristics, (customer wise special characteristics Symbol) designated by REPL or as mentioned in Control Plan/ IPO Annexure D in accordance with respective drawings (specifications included). Part rank varies by product type, such as automobile, or other product. The same parts with identical function may be given different designation depending on the product type. If providing the same parts for different products, the supplier shall confirm the designation for each product.

b. Implementation of special control

The supplier for Important safety parts and Important quality characteristics, shall implement a thorough maintenance and control of quality characteristics as follows in addition to regular quality assurance activities.

c. Process Control for Important Safety Parts

The supplier shall place marks specified by REPL on the process quality control table/ control plan. The supplier shall include all quality characteristics related to Important safety parts in the process quality control table, control plan/ IPO (As applicable as per REPL Reqt) and control processes related to the REPL designated Important quality characteristics (Symbol as per Part drawing or as mentioned in control plan/ IPO) by designating them as key items.

d. Lot Control (Identification & Traceability)

The supplier shall practice lot control for Important safety parts and maintain records in a manner that manufacturing history and release history correspond to the identification of lots. With this procedure, the supplier shall excise control that the scope of affected lots is identified and kept to a minimum in the event of non-conformity.

5.7 Packaging Requirements:

1. Finalize packaging requirements with REPL
2. Packaging development by considering following.

a. Weight of product
b. Over all dimension of the product
c. Product performance / Quality to remain unchanged during packing, shipping and unpacking.
d. Need of special handling equipments
e. Operator safety.
f. Method of shipment

g. Reuse of packaging material
h. Customer requirement
i. Cost of packing
j. Shipping standard (if available)
3. Packaging evaluation tested under expected condition of transport & material handling
4. Preparation of packing list
5. Ensure packing material as per packing list.
6. Prepare packing Inspection check list
7. Inspect packing as per check list.
8. Record preparation to ensure traceability
9. Have reaction plan in case of any non-conformance

5.8 Guideline for SPC (Statistical Process Control)

5.81 Scope: For the special characteristics identified (Attribute/variable).

5.8.2 Purpose: To establish a procedure for improving statistical control and verify the capability.

5.8.3 Procedure:

A. For Preliminary Process Control (Process Capability) :
1. This Preliminary process study is to be carried out during the new Product / Process Development or change in the existing process)
2. X bar – R chrt can be used to study the preliminary process performance,
3. Ensure that the measurement system is acceptable before conducting preliminary Statistical Process Capability study
4. The study should be based on 25 or more subgroup of data containing at least a total of 100 individual readings (short term).
5. Interpret the control chart for stability (control), If stability is not achieved determine appropriate action (Refer II of interpretation).
6. Interpret for capability (process performance) : he 6σ range of a process total variation, where σ is usually σ estimated by S, the standard deviation calculated using all of the individual values .

$$Pp = \frac{USL - LSL}{6s}$$

$$Ppk = \text{Min}\left(\frac{USL - \bar{\bar{X}}}{3 \text{ sigma}} \right)$$

Or

$$\left(\frac{\bar{\bar{X}} - LSL}{3 \text{ sigma}} \right)$$

Note: It should be used only to compare to or with Cp and Cpk and to measure and prioritized improvement overtime. Calculate the Ppk index and take the following actions.

RESULTS	INTERPRETATION
Processes that appear stable Pp & Ppk > 1.67	The process probably meets requirements.
1.33 < Ppk < 1.67	The process may not meet requirements. Give additional attention to the characteristic until ongoing Cpk > 1.33 is achieved.
Process that appear	Unstable Depending on the nature of the instability, the process may not meet requirements. Special Causes should be identified, evaluated and whenever possible, eliminate. Use 100% inspection & increase SPC sampling until ongoing stability with a Cpk of 1.33 is demonstrated or until the customer is satisfied. Process improvement must be given a high priority and documented in a corrective action plan.

B. On Going Process Capability Study :

1. Ensure the measurement is appropriate i.e. (least count of instrument is at least 1/5th of the expected process variation (or) 1/10th of tolerance whichever is less).
2. Before collecting data, ensure that there are no obvious deficiencies like faulty gauge, loose clamp, improper tool etc.,
3. Ensure R&R (MSA study) is carried out for the measurement system and it is acceptable.

Data Collection :

4. Plan the data collection like how many samples, what frequencies, who will measure, the format etc. also decide which process parameters needs to be monitored during study. Generally up to 25 or more subgroups containing about 100 or more individual readings give a good test of stability (for control chart method)

6. While collecting data, note down all the process events with respect to time.

7. Select suitable scale for the control chart (Generally for X bar chart, the scale should be such that UCL / LCL should occupy approx.50 % the middle of the chart. For R chart, the scale should be double that of X the bar chart.)

8. Calculate the average (X bar and range R of each sub-group).

9. Plot the average and ranges on the control chart, connect the points with lines.

10. Ensure that the calculation and plots are correct.

11. For the charts UCL and LCL value not calculated shall be mentioned as 'INITIAL STUDY' on the date column.

Calculate Control Limits :
R-chart

$$\text{R bar} = \frac{R1 + R2 + \ldots + Rn}{N}, \quad N = \text{No. of subgroups}$$

$$\text{Xbar} = \frac{\text{Xbar.1} + \text{Xbar.2} + \ldots + \text{Xbar.n}}{N}$$

Then,
UCLr = D4R bar LCLr = D3R bar

D4, D3 are constants varying by sample size.

12. Draw lines for the averages and the control limits on the charts. Interpretations For Control :

13. Analyse the data for control in prediction check the existence of Special Causes as per conditions given under action on Special Causes on Control Chart. If the process is not under control (i.e. approximately more than 20% of points fall outside limits) study the process using cause and effect diagram prepared for that process.

14. Establish control by taking action on the process and repeat the study Homogenization:

15. Re-calculate the control limits with the excluded readings of out-of-control point affected by special causes in the R chart. Calculate new average range (R bar) & confirm that all range points show control when compared to new limits.

Calculate Process Capability:

16. Once control is established, evaluate process capability Cp & Cpk.

$$\text{SIGMA } (\sigma) = \frac{\text{R bar}}{d2}$$

$$Cp = \frac{USL - LSL}{6\sigma} = \frac{\text{Tolerance}}{6\sigma}$$

If Cp is > 1.33 carry out the following steps, else follow step 16.8.
Xbar chart :

Calculate UCL X bar = X double bar + A2 Rbar
LCL X bar = X double bar – A2 R bar

16.1 Follow the steps described 13 to 15 for X bar charts

16.2 Calculate $Cpk = Min \left(\frac{USL - Xdouble\ bar}{3\ SIGMA} \right) or \left(\frac{Xdouble\ bar - LSL}{3\ SIGMA} \right)$

16.3 X bar chart signals the variation in the process averages w.r.t. time, the recorded process events like dressing, adjusting, tool change etc. should be correlated to the variation in the control chart. Xbar charts generally describe the stability of the process, i.e. maintaining the process average w.r.t. time.

16. 4 If all conditions are satisfied, establish UCL, LCL for both Xbar & R chart & use it for on going control, mention the date on which control limits calculated in the ongoing control chart.

16.5 Based on the knowledge obtained from the interpretation and process knowledge establish corrective action instructions to prevent the defects due to probable special causes which occurs during on-going process. Establish disposition action instructions when out of control situation occurs, depends upon the Cp and Cpk values as per the following table.

<table>
<tr><td rowspan="2">The MOST RECENT POINT indicates that the process</td><td colspan="3">ACTIONS ON THE PROCESS OUTPUT Based on the Ongoing process capability (Cpk)</td></tr>
<tr><td>Less than 1.33 **</td><td>1.33 - 1.67</td><td>Greater than 1.67</td></tr>
<tr><td>Is in Control</td><td>100% inspect</td><td colspan="2">Accept product Continue to reduce product variation.</td></tr>
<tr><td rowspan="2">Has gone out of control in an adverse direction. All individuals in the sample are within specification.</td><td colspan="3">IDENTIFY & CORRECT SPECIAL CAUSE</td></tr>
<tr><td>100% Inspect</td><td colspan="2">100% inspect product produced since the last in-control sample..</td></tr>
</table>

	100% Inspect	Inspect 100% since the last in-control point.	Accept product Continue to reduce product variation.
Has gone out of control in an and one more individuals in the sample are outside specification	IDENTIFY & CORRECT SPECIAL CAUSE		

16.6 The process shall be focused at the mean to achieve Cpk to the value of Cp, depends upon the process.
16.7 Periodically review the control charts for
a) Repetitive out of control conditions and its causes
b) Effectiveness of SPC implementation w.r.t actual Vs estimated rejections.
c) Continuous improvement plan shall be initiated for all special characteristics identified once if the stability & required capability is achieved (Cpk>1.33) to reduce the variation).
d) Review and revision of control limits on evidence of improvement.

16.8 If Cp & Cpk is less than 1.33 QA I/C shall initiate a corrective action with resp. & target to achieve the desired process capability index. Till that time, 100% inspection shall be carried out at that station / at final inspection as appropriate.

5.9 Guideline for Skill Matrix Mapping

5.9.1 Criteria of skill matrix

1. Skill matrix should be available for every employee working in the organization.
2. While deciding the level of any employee in skill matrix specific requirement of respective department should be taken into consideration
3. When new employee join the organization his evaluation need to be done and his skill level need to be decided with the help of questionnaire
4. Minimum level of employee to be deputed on machine/ inspection should be Level 2 (Skilled)
5. Upgradation of every employee to be done by providing necessary classroom trainings and on job training
6. While upgrading the skill of any employee score in respective level exam and his performance on shop floor need to be taken into consideration
7. Skill matrix need to be updated with frequency of once in 3 months.

5.10 Quality Target Agreement

Supplier shall always approach to continual process improvement with the aim of Defect free product supply to REPL with on time delivery & supplier shall achieve 'A' rating

So below is the Quality Target Agreement

MEASUREMENT	TARGET
PPM	500 **Maximum**
Concern Response Time	24 hrs.**Maximum**
Quality Concern	8 D methodology / **Why why analysis**
Line Disruptions	0
Downtime on REPL-V Line	0
Each lot Requirements	PDIR, RMTC **once in 3 months** & Third Party lab certificates (Twice in a year)

1. Sample submission requirement

The supplier shall provide the PDI along with RMTC for every lot of the parts. The Supplier shall maintain parts histories from the commencement of the sample manufacture until the end of the series production so that changes can be traced.

2. Product re-qualification

The PPAP to be done on yearly basis by the REPL quality team and the supplier should prove the robustness of their part production process.

3. SPC/ Layout Inspection

The supplier should fixed testing intervals and random sample checking for the verification of special characteristics. Supplier should affirm suitable methods to monitor the special characteristics. **For special characteristics or important parameters, Cp must be more than 1.67 to be monitored for 125 parts at initial PPAP submission stage & 50 parts for YOY Verification.**

Supplier must submit layout inspection report complying for all the dimensions / notes / tests mentioned on the drawing once in a year.

4. Process target audit

The process targets should be achieved as per the standard requirements of the parts to be manufactured. In addition, supplier confirms that these standards will be achieved as per the VDA audit requirements.

5. Product safety requirements

Under the requirements of IATF 16949, the supplier must incorporate documented processes for the management of product safety-related processes, products and services. Based on additional customer-specific requirements that apply, a responsible person must be appointed as Product Safety and Conformity Representative for every production facility.

6. Delivery Item and Delivery Scope:

The Supplier shall ensure that the goods delivered correspond to the samples, models, drawings, and technical specifications that have been stipulated by REPL or developed by the Supplier and approved in writing by REPL. The same applies for all samples, models, drawings, and technical specifications that both Parties can be proven to have declared relevant to the deliveries

7. Quality assurance requirements:

The parts being proprietary, any quality failure responsibility lies with the supplier. The supplier must deliver the parts with the required quality documents and reports, which provides all the technical parameters and dimensions confirmations of the supplied parts.

REPL and the supplier agree to implement the zero-defect strategy. To this end, the Supplier shall develop an appropriate production and delivery safeguard plan for the production site(s) and facilities in order to ensure continuous deliveries to the receiving plant.

The Supplier shall implement appropriate testing and inspection procedures to ensure that all merchandise delivered to REPL is free of defects.

.

8. Rejection of part:

All defective semi-finished parts (the Supplier on a one-for-one basis will replace delivery) If in the course of assembly, a defective semi-finished part leads to rejection of the adjacent component as well, the Supplier shall also bear the semi-finished part cost of the adjacent component. In addition, the Supplier shall also bear the value-added losses for all defective semi-finished parts including adjacent components that likewise must be rejected due to assembly.

9. Packaging:

Packaging should be such as the parts must be protected from dents/damages/rust up until received at REPL Premises.

For Seaworthy packaging: it is included in the scope of the Supplier's supply obligations. The packaging must be such as to afford the goods full protection for an additional 30 days after their arrival in the Indian harbour of destination.

Packaging scheme will have to be finalized between REPL and supplier and then it is mandatory to adhere the same.

10. New Parts Development

In case of any new parts development or some EC (Engineering Change) in existing parts, the sample submission must be as per agreed timelines between REPL and supplier.

11.Change Management

In case of any changes such as process, location, skilled person, RM grade, inspection method, packaging method etc, supplier will have to take prior approval before the start of production.

12. EHS OHSAS

In the case of Plating & Coating Supplier, MPCB Consent must be submitted.

For all the Suppliers: EHS Evaluation to be submitted every year.

****Supplier shall refer QA Target Agreement Annex. A-2 for the reference.**

5.11 Raw Material Specific Requirements

Supplier shall be REPL customer approved in concerned with SAVWI customer other as applicable with REPL Contract review agreements.
Supplier shall have a NABL lab RMTC for the raw material which is sent to REPL and supplier shall compulsory sent the RMTC with every lot of Raw Material.

**** Supplier can Ref Annex Y: Raw Material Specific Requirements**

As per below QA agreement supplier can dispatch the raw material to REPL.

1. Sample Submission Requirement:
The supplier shall provide the RMTC for Every lot. Also, Sample Strip Size (For sheets Thickness x 100 mm x 200 mm & for coils Thickness x Width x 200 mm) required with Every Lot for Receiving Inspection & Third-Party Testing.

2. Quality Assurance Requirement:
Material Required as Per VW 50065 Standard or EN STD (which ever Specified in Drawings). All the Chemical Contents Mentioned in Standard Should be mentioned on RMTC. Similarly Mechanical Properties and R Bar & N Bar Value (Wherever required) should be Mentioned in RMTC.

Supplier Shall Submit There Self audit Report at a frequency of once in a year.

3. Quality Control Requirements:
The RM being proprietary, any quality failure Due to RM Issue lies with the RM supplier. If any issue (Rusty RM, Dimensional issue) Raised by REPL Should be Respond with Following Time. Immediate Corrective Action within 48 Hours From the communication of the issue. Permanent Corrective Action with Detailed 8D Analysis Within a week time. Disposal of not ok or NG RM within 15 Days of time (at supplier Cost).
Note: Failure in fulfilling above requirement should be Liable for Scraping RM at REPL & Debit of Same will be pass on to RM Supplier.

4. Delivery:
The Supplier Shall Ensure the Raw Material Delivery as per Monthly Schedule & Forecast Based on SAVW PP Plan. Safety RM Stock Should be Hold by Supplier in Pune Service Center. Supplier Shall Ensure the Schedule Compliance Monthly as Per Requirement. Delivery at Location as per agreed Terms.

6. Packaging:
Packaging should be such as the Raw Material must be protected from dents/damages/rust until received at REPL Premises. Packing STD Should be as per VW Confirmation.

7. Penalty:
If Customer Raise any Compliant related to Raw Material, Then Same Will be Pass on to RM Supplier.

8. Price:
As per Customer SAVW Contract Rate Price or As applicable.

9. EHS OHSAS

EHS & OH&SMS Norms Shall be followed by RM Supplier for Supplying the RM.

For all the Suppliers: EHS Evaluation to be submitted every year.

** **Supplier can refer the Annex A-2-1 for their reference – QA Agreement.**

5.12 Guideline for MSA

a. Purpose: To ensure gauges, measuring instruments, test apparatus, selected for taking measurements during inspection and testing shall have capability to meet requirements for bias, stability, repeatability and reproducibility.

b. BIAS TEST:

The Bias study shall be carried out where the need for capturing / Quantifying accuracy
BIAS Test shall be conducted as follows:

1. Select a sample on which the bias studies to be conducted.
2. Measure / calibrate the master sample precisely through the standard room to know the true value of the master sample (to avoid the bias, please do not inform the true value to the operator / appraiser.
3. Measure the selected master sample ten times by one appraiser using the gauge to be evaluated and find out the bias for each reading and calculate average of the data collected.
4. Compare the difference between the true value and average reading calculated which would be the bias of the gauge.
5. Draw histogram for the distribution of readings and interpret for bell shape pattern, for non-random pattern identify the cause and correct.
6. Calculate the Limits ± t sigma as per the format attached.

Conclusion:

1. The Measurement system is acceptable, if the zero falls within the Confidence interval of the bias.
2. If the Bias is statistically non-zero, then look for the following cause :

Ø Error in Master or Reference value. Check mastering procedure.	Ø Worn Instrument.
Ø Instrument made to wrong dimension.	Ø Instrument measuring the wrong characteristics.
Ø Instrument not calibrated properly.	Ø Instrument used improperly by appraiser.
Ø Instrument correction algorithm incorrect.	

If the Bias cannot be adjusted to zero, it still can be used through a change in procedure (e.g. adjusting each reading by the bias).

c. LINEARITY TEST:

Linearity study shall be carried out for the measurement systems where BIAS over its operating range (Process Variation) is of importance. Linearity Test shall be conducted as follows:

1. Select the 5 Nos. (minimum) of master samples of different sizes covering entire operating range of gauge instrument representing process variation.

2. Measure / calibrate the master samples precisely through the standard room to know the true value of the master sample (to avoid the bias, please do not disclose the true value to the operator / appraiser).

3. Arrange the selected master samples in random manner by giving no. 1 to 5 to avoid any bias in the measurement results. Take 10 readings for each master and record the same, (by using one or more appraisers).

4. Calculate the average reading for each master.

5. Calculate the bias for each master sample by comparing the true value and the average value of each master.

6. Plot the graph using the true master value on X axis and bias of the each master on Y-axis.

7. Check for the linear relationship, if yes, calculate the slope of the straight line plotted. If it is non-linear analyze the causes and take Corrective Actions.

8. Calculate & Plot the best fit line & the Confidence band of the line using the equations as per the format attached.

Conclusion:

1) Linearity for the Measurement System is to be acceptable, the 'Bias = 0' line must lie entirely within the confidence bans of the best fit line based on Bias average

2) If the graphical analysis indicated that the measurement system linearity is acceptable then the calculate t-statistics (ta & tb) as per the formula given in the format. If the value of ta & tb is less than or equal to tgm-2,0.025, then the Measurement system has the same bias for all reference values.

3) If the Measurement system is non-linear the following possible causes and take corrective actions.

· Error in the master	· Gauge design is to be reviewed
· Worn out gauge	· Instrument not calibrated properly
· Gauge made to wrong dimensions	· Checking method not followed.

d. STABILITY TEST:

The stability study is carried out for the measurement systems where two or more instruments measuring a . single characteristic (e.g. Bore dial gauge, Air gauge) in order to study which one is more stable and to evaluate calibration intervals (especially where instruments are found out of calibration frequently)

1. Select 3 master samples each one at lower, middle and upper specifications.
2. Obtain reference values of the master samples precisely through the standard room.
3. Identify the masters suitably.
4. Check these samples in such a way that all 3 samples get measured 3 times in a random manner. The readings should be taken at different times (i.e. morning, noon & evening). The Frequency of this can be once in 3 days weekly, monthly etc. based on the prior knowledge on the stability of the instrument and the frequency of calibration.
5. Record these readings in a X bar and R chart maintained separately for each sample.
6. Keep the master samples in standard room with adequate pre-caution to avoid damage / rust etc.
7. Repeat the point no. 4 and 5 at a frequency of minimum once in a day (note down any damage / repairs of measurement systems/ excessive usage/ not used,etc., in the chart).
8. Once the initial study is completed i.e. after 25 Subgroup data is collected & calculates X bar, R, UCL and LCL. Interpret the control chart for stability using control chart interpretation(If any out of control points) & homogenise if required.
9. Calculate R bar / d2 i.e. measurement process standard deviation, this can be compare to process standard deviation (or) tolerance.

Conclusion:
The acceptance criteria for stability is the Statistical stability of the instrument based on the trends in Control chart. Where required R&R and Bias can be captured analytically.

Graphical Method:

a. Out of control condition on R chart indicating unstable repeatability (may be some times due to loose instrument, dust, dirty, oily condition, variation in supply voltage etc.
b. Out of control condition of X bar chart indicating measurement system no longer measures correctly (accuracy has changed) may be due to

· Error in the master	· Gauge design is to be reviewed
· Worn out gauge	· Instrument not calibrated properly
· Gauge made to wrong dimensions	· Checking method not followed.

After the above requirements are satisfied, the UCL, LCL is established and used for ongoing control, follow the steps 3, 4, 5 and repeat the same at a suitable frequency decided and (once in a week, year) depends upon the criticality and the calibration frequency of the particular measurement system. Interpret the control chart for out of control points, identify the causes and correct.

Analytical method:

$$\%\ R\ \&\ R = \frac{\text{Measurement Process Standard Deviation}}{\text{Process Standard Deviation or Tolerance/6}} \times 100$$

R& R --- Refer acceptance criteria for R&R study

Bias can be captured using formula table as specified in the BIAS study.

GAUGE REPEATABILITY AND REPRODUCIBILITY (R & R):

This study is carried out for all measurement systems where it is repeatable and precision is required.
(Using measurement data continuously to adjust the process).

1. Select 10 parts in such a way to represent the entire process variation (actual / expected)

2. Select the 3 appraisers (operator / inspector) 'A', 'B' and 'C'.

3. Identify the parts 1 to 10 in such a way that is not visible to the appraisers and identify the particular parameter is to be measure.

4. All Appraisers should follow the same procedure to obtain the readings.

5. The study should be conducted in a random manner. Appraisers should be unaware of which numbered part is being checked.

6. A standard room in charge should aware which numbers is being checked and record the readings of that against that number in the format.

7. Let appraiser 'A' measures 10 parts in a random manner and finishes the trial 1.
8. Call appraiser B & C measures the same 10 parts ensure that readings are shown to the appraisers.

12. Calculate % EV, % AV, % R & R, % PV and against total variation captured or tolerance using the following guidelines :

- Where process capability is very high & no SPC is required, the tolerance can be used.
- Where SPC is to be implemented it is better to present the % R&R in term of total variation. But TV should not greater then the Tolerance on the component.

13. Acceptance criteria for R&R to be adhered as below and specified on the format :

- Under 10 % error – Measurement system is acceptable
- 10% to 30% error – May be acceptable based upon criticality, cost of gauge, repair etc.
- Over 30 % error – Measurements system needs improvement – Make every effort to identify the problems and have them corrected.
- No.of distinct data categories – For No SPC – More than 2 Where SPC -- Equal to or more than 5

14. Analyze the study using the following guideline:

1) Compare EV and AV. If EV is higher than AV reasons may be,

2) The instrument needs maintenance.

3) The gauge should be re-design to be more rigid.

4) The clamping or location needs to be improved.

5) There is excessive with in part variation or capture within part variation separately, follow the same procedure with checking the part through out and reports maximum & minimum.

6) Draw part-to-part variation chart and analyse the customer comments.

15. If AV is compared to be larger than EV reaction may be:

- The appraisers needs better training. This can be identified from the X values of each appraisers or from average of Error char and Average Chart as described in a MSA Manual.

- Calibrations on gauge dial are not clear. A fixture may be required to support the appraiser more conveniently.

Graphical analysis:

1. At a minimum the X bar and R chart is drawn and conclusions are documented in each chart.
2. All charts described in MSA manual is utilized where the MS R&R is More than 10%

Graphical analysis:

1. At a minimum the X bar and R chart is drawn and conclusions are documented in each chart.
2. All charts described in MSA manual is utilized where the MS R&R is More than 10%

ATTRIBUTE GAUGES CAPABILITY STUDY:

The Gage performance study as per MSA manual can be conducted for measurement systems used for precise parts.

The following method is used for measurement systems where reference values can be captured and also for Visual Inspection.

NOTE: This method is not from MSA manual; this is taken form " Productivity and Quality Improvement" book by H.L.Hradesky. Where required by contract, customer approval is obtained.

- Selection of no. of parts, no. of trials based on the no. of appraiser as described in table.
- Select the master sample parts as below mentioned.
  - 25 % Good sample parts
  - 25 % Bad sample parts
- 25 % marginally good sample parts
- 25 % marginally bad sample parts (These samples are to be approved by DH QA or authorized person in the form of Good and Bad category).
- Identify these samples in the form of random fashion and put up three numbers.
- Carry out the trial by each operator take the decision in the form of Good and Bad form with different trials and record these decisions.
- Repeat the above procedure for each operator.
- Find out the how may Good and each operator has taken Bad decisions.
- Compare these results with the authorised person.
- Calculate the values.
- Acceptance criteria are described in table.
- Analyse the collected data and interview the concerned appraise. Identify the need for training, establishing / upgrading visual standards, providing masters etc.
- This shall be conducted repeatedly till all the appraisers meet the required criteria at a suitable interval to evaluate the effectiveness of actions taken
- Once all appraisers reached the defined level, this study can be conducted whenever new inspection is included, or by default this study shall be conduct once in a year.

All these studies should be carried out at least once in a year, whenever new measurement systems is included or significant changes in measurement system.

TABLE: 01

Sample Size for Inspection Capability Studies		
No. of Appraisers	**Minimum No. of Parts**	**Minimum No. of Trails**
1	24	5
2	18	4
3 or 4	12	3

TABLE: 02

Special Cases in Computing BIAS			
P(FA)	**P(Miss)**	**B**	**Decision or Action**
0	More than 0	0	Unacceptable.
More than 0	0	No Value	Use E, P(FA) and P(Miss) directly.
0	0	No Value	This is same as B=1 since P(FA)=P(Miss) Acceptable
More than 0.5	0.5 or Less	More than 1.5	Unacceptable.
0.5 or Less	More than 0.5	Less than 0.5	Unacceptable.
More than 0.5	More than 0.5	No Value	Bias unimportant study is unacceptable based on P(Miss) and P(FA) being more than 0.5.

Bias Factor Table for Inspection Capability Studies Involving Attribute Data

TABLE :03

P(FA) or P(Miss)	B(FA) or B(Miss)	P(FA) or P(Miss)	B(FA) or B(Miss)	P(FA) or P(Miss)	B(FA) or B(Miss)	P(FA) or P(Miss)	B(FA) or B(Miss)
0.01	0.0264	0.14	0.2227	0.27	0.3312	0.4	0.3867
0.02	0.0488	0.15	0.2323	0.28	0.3372	0.41	0.3885
0.03	0.0681	0.16	0.2444	0.29	0.3429	0.42	0.391
0.04	0.0863	0.17	0.2541	0.3	0.3485	0.43	0.3925
0.05	0.104	0.18	0.2613	0.31	0.3538	0.44	0.3945
0.06	0.12	0.19	0.2709	0.32	0.3572	0.45	0.3961
0.07	0.1334	0.2	0.2803	0.33	0.3621	0.46	0.397
0.08	0.1497	0.21	0.2874	0.34	0.3668	0.47	0.3977
0.09	0.1626	0.22	0.2966	0.35	0.3712	0.48	0.3984
0.1	0.1758	0.23	0.3034	0.36	0.3739	0.49	0.3989
0.11	0.1872	0.24	0.3101	0.37	0.3778	0.5	0.3989
0.12	0.1989	0.25	0.3187	0.38	0.3814		
0.13	0.2107	0.26	0.3251	0.39	0.3836		

TABLE : 04

Evaluation Criteria for Inspection Capability Studies involving Attribute Data			
Parameter	**Acceptable**	**Marginal**	**Unacceptable**
E	0.9 or More	0.8 to 0.9	Less than 0.8
P(FA)	0.05 or Less	0.05 to 0.1	More than 0.1
P(Miss)	0.02 or Less	0.02 to 0.05	More than 0.05
B	0.8 to 1.2	0.5 to 0.8 or 1.2 to 1.5	Less than 0.5 or More than 1.5

RECORD OF REVISION :

DATA COLLECTION SHEET	
(SHORT/LONG)	
Date :	**Conducted By :**
Parameters :	**Part No. :**
Guage No. :	**Guage Type :**

SL.NO	APPRAISER 1			APPRAISER 2			APPRAISER 3			MASTER STATUS
	TRIALS			TRIALS			TRIALS			
	1	2	3	1	2	3	1	2	3	

□ - MISS (accepting a bad part)

○ - FALSE ALARM (rejecting a good part)

B – Bad **G – Good**

DATA EVALUATION SHEET	
Date :	**Conducted By :**
Parameters :	**Part No. :**
Guage No. :	**Guage Type :**

SL.NO	PARAMETERS	APPRAISER		
		1	2	3
1	TOTAL NO. OF SAMPLES (N)			
2	NO. OF TRIALS (n)			
3	NO. OF GOOD SAMPLES (N G)			
4	NO. OF BAD SAMPLES (N B)			
5	NO. OF MISS (N M)			
6	NO. OF FALSE ALARM (N FA)			
7	NO. OF GOOD DECISION (N GD)			

8	PROBABILITY OF MISS = [p(m)] = $Nm/(Nb\ X\ n)$			
9	PROBABILITY OF P (FA) FALSE ALARM = $(N\ FA)/(N\ G\ X\ n)$			
10	EFFECTIVENESS (E) = $(N\ GD)/(N\ X\ n)$			
11	* B (MISS)			
12	* B (FALSE ALARM)			
13	BIAS FACTOR = B (FALSE ALARM) B (MISS)			
14	* CONCLUSION			
* Refer Table				

5.13 PPAP Requirements

1. Guideline for Production Part Approval Process (PPAP)

Part Approval will be required by REPL for new or changed parts prior to volume production from all the suppliers. (as per REPL customer requirement)
Parts requiring PAP approval (As applicable)
Part Approval shall be obtained from REPL when any of the following conditions occur, prior to dispatch of bulk production.

1. Initial submission
2. For new part
3. For a product design change.
4. For a process change. (Any changes in machine capacities or equivalent machines are considered as process changes)
5. When previous submission is rejected.
6. Production from new / modified press tools / moulds.

Notes:

- PPAP submission is not required for suppliers of direct raw materials and proprietary items.
- No supplier will be entitled to make any change (Without prior permission and due approval) in the product and process controls verified and approved by REPL on the basis of document submitted. Violation of this requirement may leads to review of suppliers' status in REPL.

Notification to REPL when any other following conditions occur

1. Production following upgrade / Re-arrangement of tooling or equipment.
2. Change of source of Raw material, Brought out parts or Sub-contracted activity.
3. Product produced after the tooling has been inactive for 12 Months or more
4. Change in the test or Inspection method.

The following documents are to be submitted for production part approval process

(a) For ISO 9001:2015 certified or REPL approved suppliers.

1. PSW (Part Submission Warrant)
2. Design Records-Saleable product including supplier/ subcomponent drawing as applicable
3. Any authorized engineering change documents – Include copy of the Organization ECN – If any
4. Organization/ Customer Engineering Approval- As noted on design record
5. Design FMEA- If the supplier is responsible for design.
6. Process Flow Diagram (PFD) and Supply Chain Documentation (PQCS)
7. Process Failure Mode and Effects Analysis (PFMEA)
8. Control Plan/ IPO
9. Measurement System Analysis studies (MSA)- e.g. Gage R&R for all IMT's used in part inspection as per control plan.
10. Sample Inspection (Dimensional) Report
11. Material / Performance Test Results
12. Initial Process Capability Studies- CC's and SC's and other specified attributes (Should be >1.33)
13. Qualified Laboratory Documentation
14. Appearance Approval Report (AAR)
15. Sample Product for Layout, Cosmetic Validation, Styling or Pilot
16. Master Sample - To be identified and retained by the supplier.
17. List of Checking Aid e.g. all IMT's used in part inspection as per control plan with valid calibration status.
18. Customer Specific Requirements (CSRs)

Note: SPC & MSA is applicable for special characteristics only

(b) For IATF 16949:2016 certified suppliers' documents shall be submitted as per latest PPAP manual

After approval of PPAP supplier shall commence first supply to REPL. The first supply is to be identified using Special tag.

5.14 Guidelines: Regular Production Deliveries

❖ **Product Supplies**

Only those parts that satisfies REPL's quality standard are to be dispatched as per schedule given from time to time.

❖ **Non-Conforming Supplies**

When a supplier identifies a deviation of any parameter from its specification, QA dept. At REPL must be informed of the details. This nonconforming product must not be dispatched to REPL till clearance from QA Dept. Supplier to raise **(concession approval) Deviation Request Note (Annexure – E)**. And if not allowed, supplier shall not supply those components

5.15 Guidelines: Reporting on Quality Problems

When a problem has been identified by REPL, which requires a **Corrective Action from supplier, (Annexure F – 8D Problem Solving Action Plan)**

This report identifies the problem and Quantity supplied and disposition status.

A Corrective action / Corrective action Impact should be taken by the supplier in order to prevent the re-occurrence of the same.

No further deliveries of the parts referred to in the report are to be dispatched till all necessary actions are implemented to meet REPL requirements. If planned action will cause delay to further deliveries, supplier shall inform the same well in advance to stores and purchase dept.

5.16 Inspection Facility & Audit Requirements

1) Separate inspection area required with min required facility.

- Vernier Caliper, Micrometer, Surface Plate, Scale, Tape, Height Gauge, Bevel Protractor, TPG (Thread Plug Gauge), Ring Gauge, Standard Pin Set, Lux Meter etc as Applicable w.r.t REPL Requirements & Product Requirements
- Inspection Table with Minimum Light Lux Value 800-1000 Lux
- Noise Level should not be above the audible range – 20Hz to 20,000Hz

2) Separate RM area with REPL decided system.

3) Control Plan, PFMEA, PFD & IPO (If Applicable) – For All Parts

4) 3 Layer Audit (First step is to implement all 8 Check sheets)

5) Top 5 defect analysis & monitoring (IHR & CC).

6) Manpower status & monitoring.

7) Self audit (All) & REPL audit NC closure status.

8) Child part weld penetration report monthly submit to REPL.

9) Layout inspection quarterly report submit to REPL with NCs action plan

10) 100 % PDI report compliance.

11) Action on Inspection side and then on cause side through poka-yoke

5.16.1 Audit Requirements:

1) Target for all audit should be in "A" grade.

2) Monthly self-audit

3) IPO status (Completed / pending).

4) Effective usage of QMS (All module).

5) JH/PM data monitoring. (Tool / fixture).

6) Poka-yoke monitoring.

7) IHR data monitoring & actions

8) Operator / inspector skill matrix & performance monitoring

9) Inspection record. (Inward to dispatch)

10) 1st piece inspection.

11) Raw material storage & usage as per BAL guideline.

12) 3-layer audit

13) Gauges Area (SOP, 1S/2S, Calibration).

14) Child part layout & its action plan

15) Shop floor 1S/2S

16) Material handling

17) Rework / rejection disposal proper system.

RUCHA

ENGINEERING EXCELLENCE

CORPORATE OFFICE :
RUCHA ENGINEERSPVT.LTD .
K249, MIDC WALUJ,
AURANGABAD MAHARASHTRA,
INDIA 431136
PHONE NO: +91 240 255 3118
EMAIL ID: repl@ruchagroup.com