

REJECTION RATE REDUCED BY IMPLEMENTATION OF ROOT CAUSE ANALYSIS METHOD

¹Jinesh D. Kamdar, ²Sarjak G. Mamtora, ³Nirav R. Panchal

¹Assistant Professor, ^{2,3}Research Scholar
¹Indus University
^{2,3}Gandhinagar Institute of Technology
 Gujarat, India

ABSTRACT : Capious RoadTech Pvt. Ltd. supported a QMS Pilot Project for the provision of production of road construction equipments using consultancy services of a company with relevant experience. It is envisaged that the experience Capious RoadTech Pvt. Ltd. has gained through this project will simplify the process and probably reduce the costs. This project has been developed to assist organisations and individuals planning to implement the ISO 9001:2008 Quality Standard. The project will address the basic concepts of quality, the requirements of the ISO 9001:2008 Standard and the importance of the management's role in implementing a Quality Management System.

Outline :

- Detailed review of the ISO 9001:2008 standard and its applications
- Discussion of the strategies for registration and how to establish a project

Through lectures, discussion, workshops and role plays company learn to apply the Plan-Do-Check-Act methodology to understand a process approach to ISO standard. The introduction helped to build reinforce effective techniques for implementation of ISO standards for planning, preparation and performance. It also helped to understand how to complete implementations based on the requirements of ISO 9001 : 2008

Outline :

- Concepts of Quality assurance and systems
- An overview of ISO 9001:2008 standard
- Analysis of quality system documentation
- Objectives of internal audits
- Types and aims of assessments
- Planning and preparation techniques
- Performing the audit
- Classification/ reporting of finding

OBJECTIVES:

- This dissertation work will focus on the practical implementation of Quality Management System based on ISO 9001 requirements in road construction equipments manufacturing company mainly in Production, Quality control & Assurance processes. The
- implementation of International requirements – ISO 9001 will standardise the company process as per international standards and focuses on improvement of product key parameters like product rejection, customer return, customer complaints, scrap reduction, etc
- The present work has been taken up to analyse & implement the framework of ISO 9001:2000 Certification in Drum mix plant Industry and reduce high return problem during field installation, customer complains, in process rejection during manufacturing process of Drum Mix Plant.

INTRODUCTION :

Capious Roadtech Pvt. Ltd. is India's leading manufacturer & exporter of road & building construction machinery. In road construction equipments, plants & machinery we are regularly exporting Asphalt Drum Mix Plant, Wet Mix Macadam Plant, Bitumen & Emulsion Sprayer, Asphalt Paver Finisher, Road Broomer, Chip Spreader. In Building Construction Machinery we are regularly exporting Concrete Batching & mixing Plant, Mobile Concrete Batching & Mixing Plant, Concrete Kerbing Machine.

QUALITY MANAGEMENT SYSTEM :

ISO 9000 family – Quality Management System

The ISO 9000 family of standards has been developed to assist organizations of all types and sizes to implement and operate effective quality management systems.

ISO 9000:2008 – Quality Management Systems – Fundamentals and Vocabulary

ISO 9000 describes fundamentals of quality management systems and specifies the terminology for quality management systems.

ISO 9001:2008 – Quality Management Systems – Requirements

ISO 9001 specifies requirements for a quality management system that can be used by any organization. This is the standard against which an organization can achieve registration, via a qualified third party audit.

The primary focus of the ISO 9001 standard is to address customer satisfaction through the use and continual improvement of quality planning and objectives. The standard requires that organizations utilize a process approach to achieve these goals.

The design and implementation of an organization's quality management system should be unique to that organization and should be influenced by customer needs, key quality objectives, the products and/or services provided, the specific processes/methods employed and the size and structure of the organization. It is not the purpose of ISO 9001 to imply uniformity in the structure of quality management systems or uniformity of documentation.

ISO 9004:2008 – Quality Management Systems – Guidelines for performance Improvements

ISO 9004 provides guidelines to organizations for performance improvement. It is based on the same quality management principles as ISO 9001. This standard provides guidance on the application of quality management and describes what processes quality management systems should encompass. The goal of ISO 9004 is to assist any organization in establishing and improving its quality management system along with improving the processes of an organization in order to enhance performance.

BENEFITS OF QUALITY MANAGEMENT STANDARDS:

Customer/Marketing Benefits

- Greater focus on customer requirements and customer service
- Conveys commitment to quality and partnering
- Promotional credibility to an international standard
- Provides access to markets and bids
- Employees become more responsive to customer needs and requirements

Internal Benefits

- Continuous Improvement Cycle of a management system results in savings
- Guarantees that new and existing products and services satisfy customers
- Facilitates business and quality planning
- Provides a universal approach to quality and business
- Assists in establishing operational baselines and enterprise alignment
- Operationalizes and proceduralizes quality
- Encourages self-assessment and maintains internal consistency
- Controls process and systems and establishes operational controls
- Makes internal operations more efficient and effective
- Corporate walls come down; people communicate better
- Ensures product development and design changes are controlled
- Reduced customer quality audits reduce your business disruptions
- Creates awareness of the need for training and encourages operational problem solving
- Provides insights on organizational interrelationships, encourages internal focus, facilitates internal operational control, and assists employees in understanding and improving operations

Customer-Supplier Partnering Benefits

- Forms the basis for a common language of quality
- Ensures a minimum level of quality
- Facilitates development of seamless operations
- Reduces supplier base and assists in selecting suppliers
- Facilitates just-in-time delivery
- Assists in monitoring suppliers

8 - PRINCIPLES OF QUALITY MANAGEMENT SYSTEMS

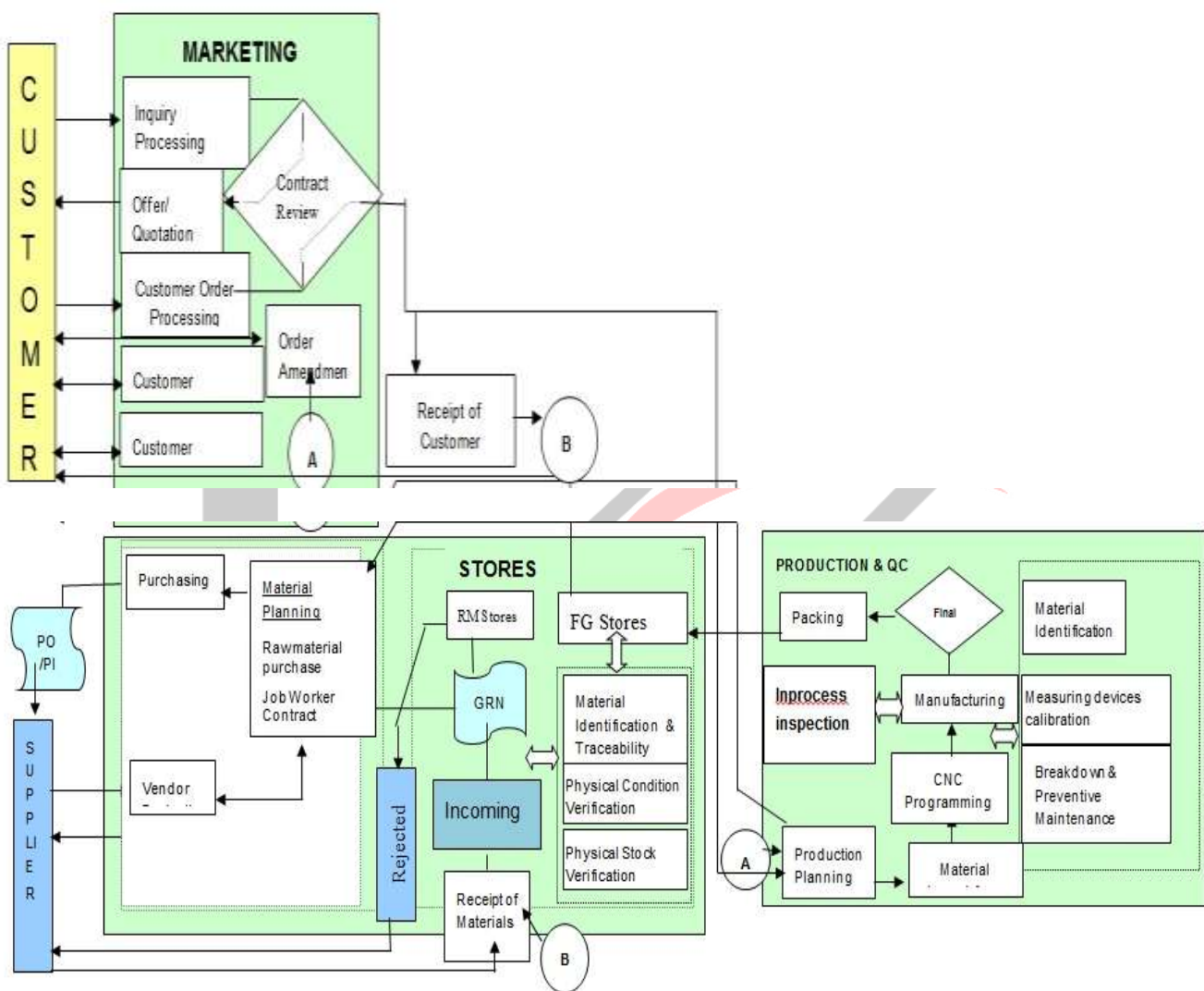
The eight quality management principles, on which the quality management system standards of the revised ISO 9001:2008 series are based, are described below.

These Principles can be used by senior management as a framework to guide their organizations towards improved performance. The principles are derived from the collective experience and knowledge of the international experts who participate in ISO Technical Committee ISO/TC 176, Quality management and quality assurance, which is responsible for developing and maintaining the ISO 9001 standards.

- Principle 1 Customer focus.
- Principle 2 Leadership.
- Principle 3 Involvement of people.
- Principle 4 Process approach.
- Principle 5 System approach to management.
- Principle 6 Continual improvement.
- Principle 7 Factual approach to decision making.
- Principle 8 Mutually beneficial supplier relationships.

INTERECTION OF PROCESS

ROOT CAUSE ANALYSIS FOR IMPLEMENTATION ISO QMS 9001:2008:



Definition/Purpose: Graphically displays potential causes of a problem. The layout shows cause and effect relationships between potential causes. Used in the Analysis phase.

Instructions: To use as a template, please save a copy by clicking on the save icon.

Place the effect or problem statement on the right side of the paper, half-way down; draw a horizontal line across the paper with an arrow pointing to the effect or problem statement.

Determine general, major categories for the causes; connect them to the horizontal line with the diagonal lines.

Use five inputs of every process:

- Person

- Method
- Machine
- Materials
- Environment

Note the major causes and place them under the general categories. Use brainstorming techniques as needed.

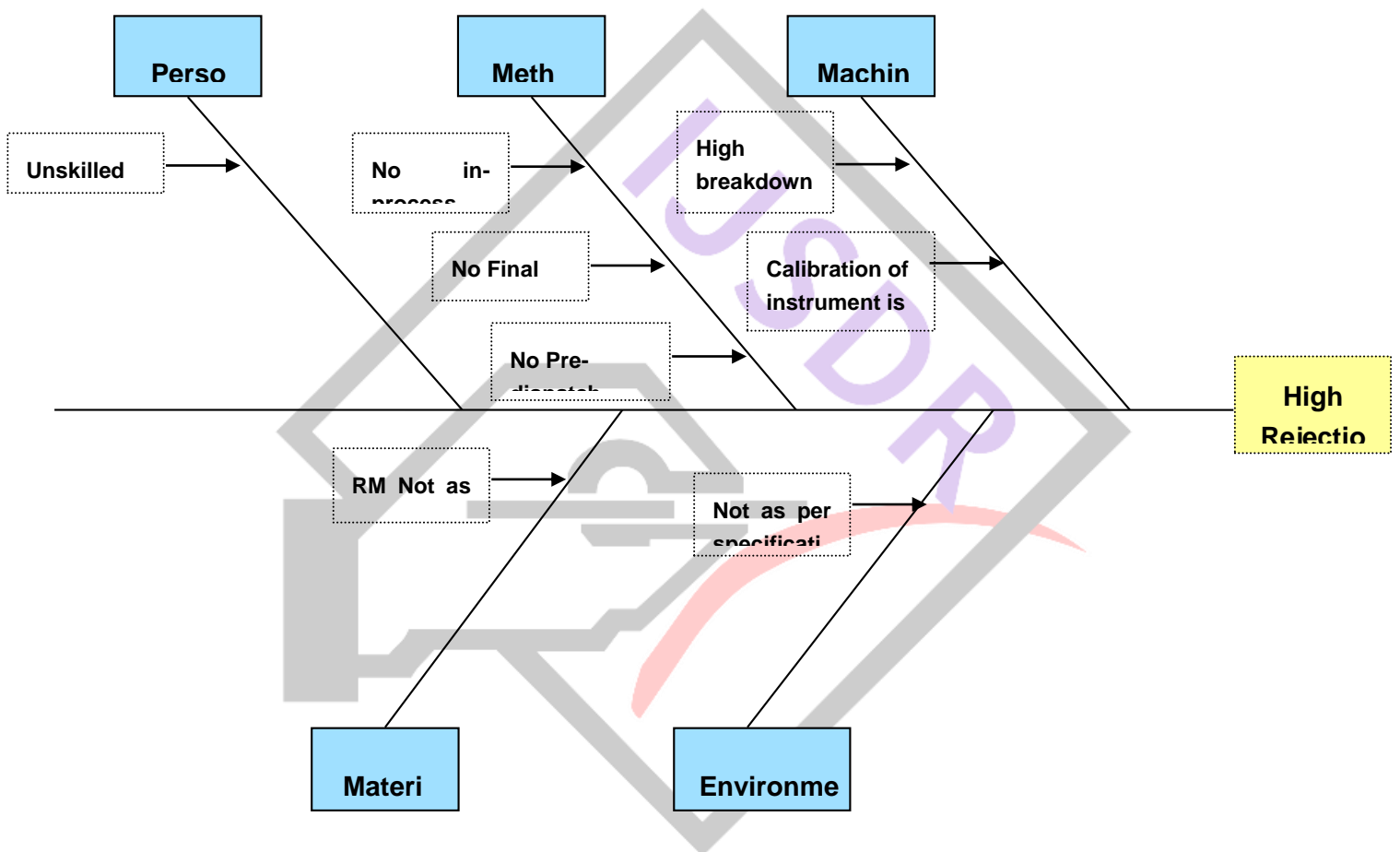
List sub-causes and place them under the main causes. To determine sub-causes, ask why five times.

Evaluate the diagram. Check that the branches on your cause and effect diagram are worded as possible causes and are arranged in a logical sequence.

Effective Use:

1. Have a narrowly defined problem or effect to start.
2. Causes on the diagram must be verified with data to confirm that they are real causes.
3. Do not use this tool as an alternative form of outlining.
4. Do not use this tool to list potentials

ROOTCAUSE ANALYSIS:



DEVELOPMENT & IMPLEMENTATION OF QUALITY SYSTEMS :

First of all quality control plan is need to prepare and accordingly necessary actions will be carried out during various processes, it is also necessary to understand the interaction between various manufacturing processes in plant.

After studying the Process flow quality control actions have been identified where improvement is ceases.

It is certainly true that the development and application of a quality assurance system helps companies to better organize and synchronize their operations by documenting their processes, clearing out ambiguities and clearly defining duties and responsibilities among employees and departments. Even more, its greatest and most important advantage lies in the fact that it introduces a preventive way of managing quality, focusing mainly on the prevention of errors, rather than their later detection and correction, which was the focus of the traditional "quality control". The significance of prevention is highly realized and appreciated by all authors in the literature, since the new competitive challenge for the companies is the successful combination of high quality and low price; in other words, the combination of quality and productivity.

The only way for companies to respond to this challenge is the use of preventive rather than corrective methods of quality management, since the latest highly increase costs and decrease productivity, without adding real value to the products. Based on the above, the implementation of a quality assurance system presents a good opportunity for companies that want to respond to the challenge.

QUALITY CONTROL PLAN :

Sr	Item / Material	Frequency / Sample Size	Ref. Document	Method of checking	Acceptance Criteria	Format of Record	Remarks
1	TRUNINO ROLLER RING	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
2	CHAIN WHEEL SEGMENT	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
3	MOTORS	100%	PO Register	By Running	Should run properly	Incoming QC Report	
4	GERAR BOX	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
5	SOILINOID VALVE	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
6	DIRECTION CONTROL VALVE	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
7	HOT OIL ROTORY PUMP	100%	PO Register	By Running	Should run properly	Incoming QC Report	
8	FIG PUMP	100%	PO Register	By Running	Should run properly	Incoming QC Report	
9	FILLTERS	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
10	V-BELT	100%	PO Register	Visual	Should not be damaged at all	Incoming QC Report	
11	CHAIN	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
12	PRESSURE GAUGE	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
13	HOSE PIPES	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
14	CONVEYOR RUBBER BELT	100%	PO Register	Visual	Should not be damaged at all	Incoming QC Report	
15	BEARINGS	100%	PO Register	Visual	Should be same as required as	Incoming QC Report	

					per our PO		
16	THERMO COUPLES	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
17	HYDRAULIC CYLINDERS	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
18	BITUMEN PUMP	100%	PO Register	By Running	Should run properly	Incoming QC Report	
19	LOAD CELL	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
20	BURNER NOZZELS	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
21	PULLYS	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
22	KADAU RING	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
23	TRINION ROLLER (RADA SET)	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	
24	S.S COIL	100%	PO Register	Visual	Should be same as required as per our PO	Incoming QC Report	

FRMAEWORK FOR QAULTY SYSTEM IMPLEMENTATIONS:

QUALITY OBJECTIVES & TARGETS:

Sr no	Department / Processes	Parameter
1	Business Planning & Sales Performance	Increase in Sales (Domestic)
2		Increase in Sales (International)
3		New Customer addition
4	Customer satisfaction measurement	Customer satisfaction Index (Improvement in customer satisfaction)
5		Reduction in customer complaints
6	Purchase	New Supplier Addition
7		Improvement supplier performance (rating)
8	Production	Reduction in Final Rejection
9		Production plan vs actual
10	Maintenance	Reduction in Machine Breakdown hours
11	Store	Physical V/s. Book stock Variation

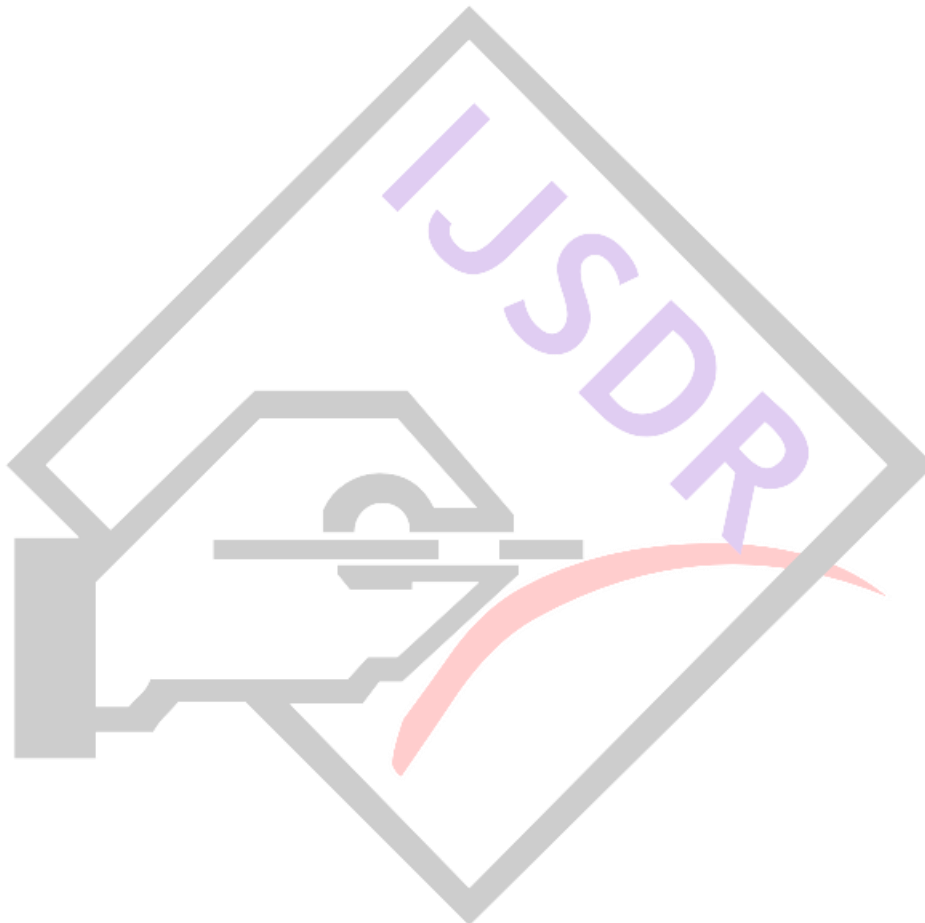
IMPLEMENTATION PHASE:

Roles & Responsibilities Given to the concern Departments for implementation:

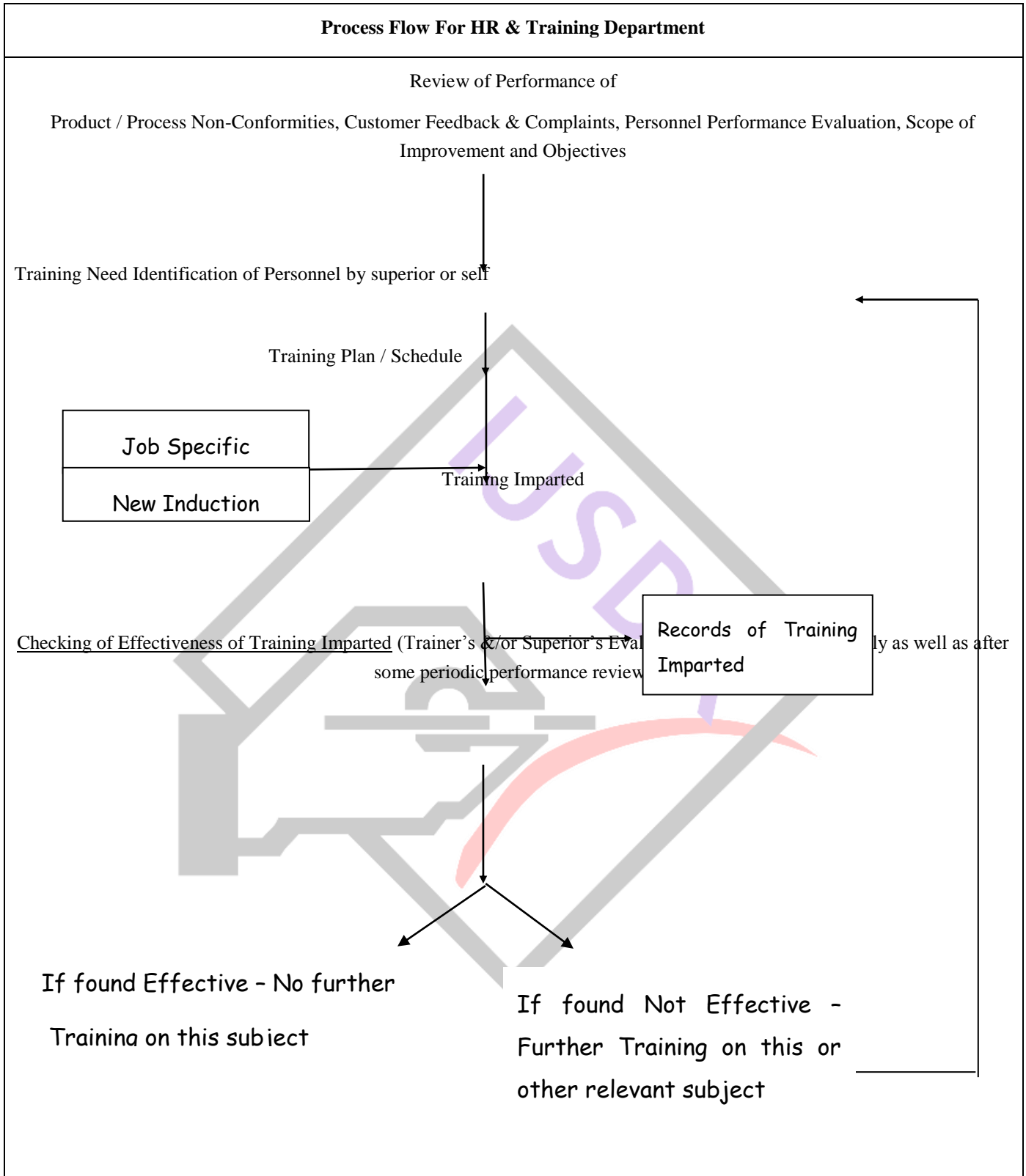
HR & Training - Activity base Responsibility:

- To attend all management review meeting as per the requirement.
- To provide training to employee to satisfy organization's needs.
- To maintain records of education, training and facilities to employees as appropriate.

- To evaluate effectiveness of training in consultation with HOD
- To provide necessary infrastructure and facilities to employees.
- Responsible for all the administration activities like human resources and personnel activities and routine activities of department.
- To ensure that all employees as identified by the organization follows the rules and regulation.
- To ensure that all the rules of factory act are followed in the organization.
- To ensure that proper records are maintained for the salary of all employee.
- To ensure that proper records are maintained for the attendance of the all employee.
- To provide man-power resources identified by the department in consultation with Director.
- To ensure stringent follow-up of the documented quality system in the department.
- To ensure that all records for personal data are maintained.
- To ensure that proper records are maintained as per ISO 9001 requirements



Process Flow for HR



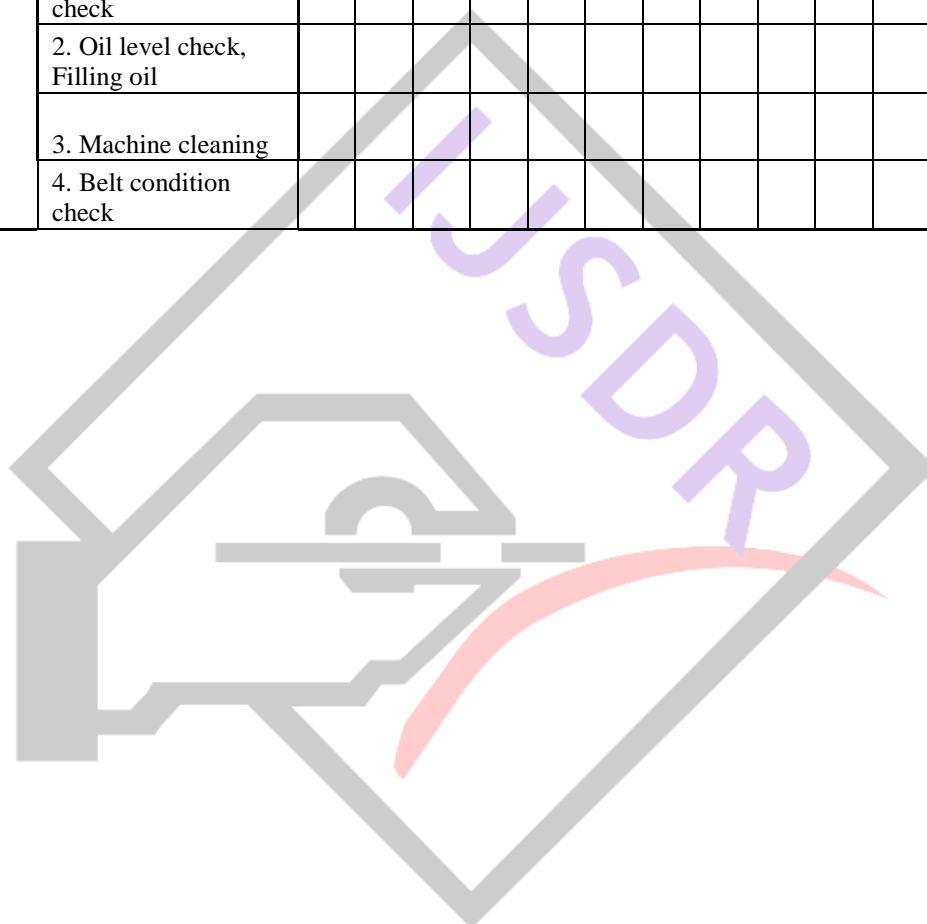
MAINTENANCE - ACTIVITY BASE RESPONSIBILITY :

- To ensure that preventive maintenance check points are prepared for all types of equipments in consultation with manufacturing personnel after review of the Equipment operation and maintenance manual.
- To decide the duration and frequency of preventive maintenance considering the preventive maintenance checkpoints. To prepare preventive maintenance schedule for the whole year and to get it reviewed by Director.
- To ensure that preventive maintenance of the equipments is done as per the planning for the said duration with strict follow – up of preventive maintenance check points.
- To identify the requirements of spares based on maintenance requirements.
- To ensure that breakdown maintenance are handled soon as possible to reduce the down time.
- To analyze the types of breakdown and to identify the needs for corrective and preventive actions.
- To ensure that necessary utility services are provided to the manufacturing as per their requirements.
- To co–ordinate with the local suppliers / maintenance job worker to satisfy the maintenance job / spares requirements.
- To ensure that the documented quality system is followed in the maintenance by all employees.
- To ensure that the proper records are maintained at all stages of maintenance.
- To review and authorize daily records of the maintenance.

Sample Preventive Maintenance Schedules :

Sr.	Machine Name & Code	Parameter / Check Point / To do Point																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Angle grinder	1. Oil level																
		2. V belt checking																
		3. Compressor cut off switch																
		4. Release air at end of day																
		5. Abnormal noise vibration																
		6. Air contamination																
	Angle grinder		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		1. Oil level																
		2. V belt checking																
		3. Compressor cut off switch																
		4. Release air at end of day																
		6. Air contamination																
		5. Abnormal noise vibration																

Sr.	Machine Name & Code	Parameter / Check Point / To do Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1	Lathe Machine	1. Gear condition check																
		2. Oil level check, Filling oil																
		3. Machine cleaning																
		4. Belt condition check																
	Lathe Machine		16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
		1. Gear condition check																
		2. Oil level check, Filling oil																
		3. Machine cleaning																
		4. Belt condition check																



PROCESS FLOW :**Process flow for maintenance**

Preparing a Master list of critical Machinery / Equipments in the plant

Unique Identification allocation to each of them

Carrying out periodic preventive Maintenance of each equipment / machinery as per Preventive Maintenance plan & recording the same in frequencywise formats made

Registering the breakdown of equipments / machineries, if any, along with its analysis, disposal, corrective and preventive measures / plans

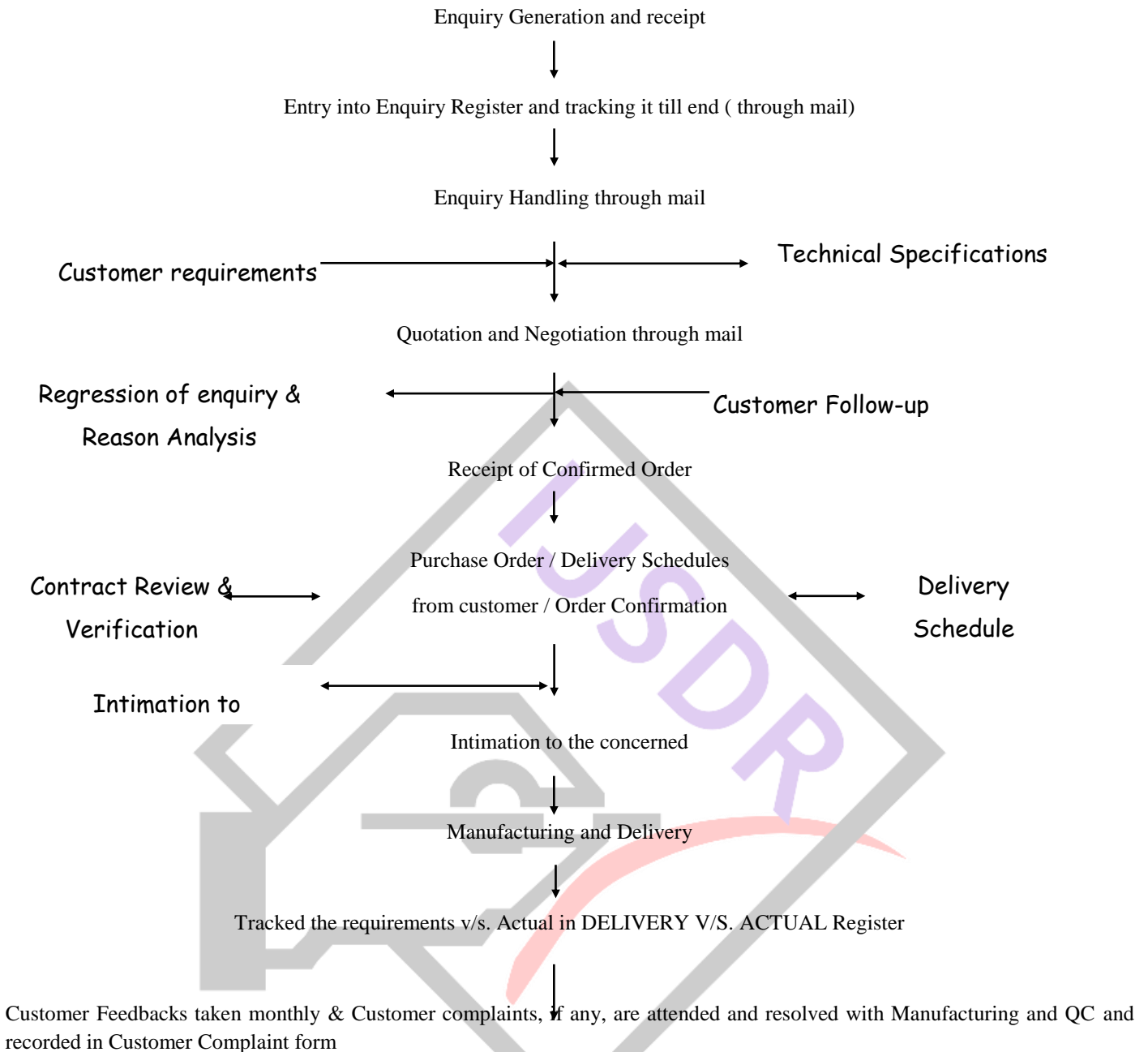
Identifying the repetitive breakdowns and correlating it with the parameters of preventive maintenance plan. If required, incorporation of these parameters in preventive Maintenance plan

Maintaining adequate spares machineries for critical ones

MARKETING & SALES - ACTIVITY BASE RESPONSIBILITY :

- 1 To review and approve, issue and control of all the work procedure, records etc. of the department.

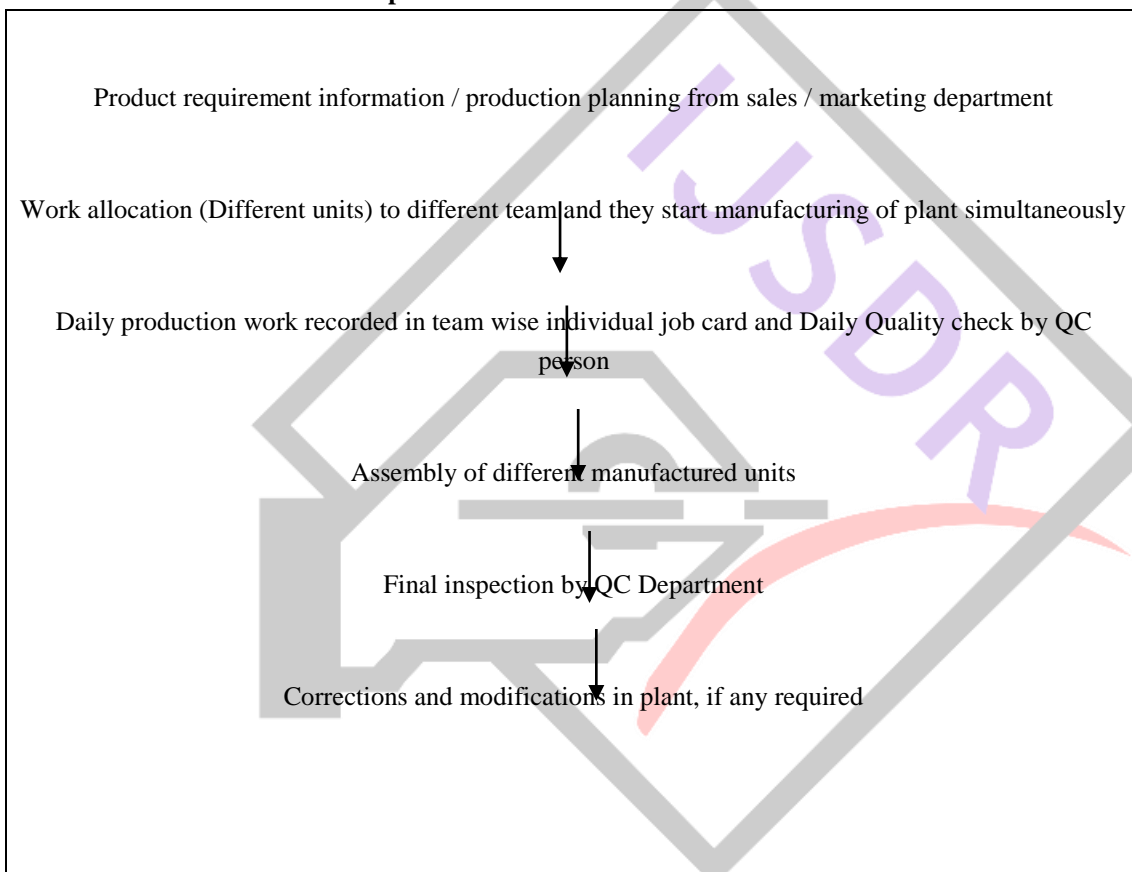
- To maintain master list of document as required by the department. To maintain and review all the records required by department as per requirement laid down in the procedure and manual.
- To attend all management review meeting as per the requirement.
- Responsible for marketing of the products in the export / domestic market.
- Responsible for routine follow-up with the prospective customers and replying customers for all contracts review activity. Responsible for all the contract review matters and maintaining records for the same.
- To ensure that customer order is reviewed and clarified for the matter
- To review amendment to the contract and transfer it to customer as well as planning, Production & Purchase . To maintain records of amendments to the orders.
- To ensure that any differences between the contract order requirements and those in the order are resolved and records are maintained for the same.
- To Prepare Sales order based on order received from Customer
- To provide feedback to the Planning, Production & Purchase regarding the entire contract matters.
- To collect the requirements for the products from the potential customer and penetrate the market.
- To ensure that documented procedures are followed.
- To ensure that all the requirements of the customers are satisfied and contracts are closed accordingly.
- To maintain all records of marketing and contract review.
- To ensure stringent follow up of ISO 9001 documented quality system in the department.
- To ensure that customer feedback are taken regularly as part of system.
- To ensure that proper action is taken based on customer feedback.
- To ensure proper follow up of the customer complaints is carried out.
- To close the contract.
- To close the customer complaint up to the satisfaction of the customer.
- To decide delivery schedules based on customer requirements and update delivery schedule as per the urgency conveyed by the customer.
- To review the routine records of the department.
- To implement ISO 9000 system in the department.
- To take corrective and preventive actions identified based on analysis of customer complaints.
- To take periodic feedback of customer & identify the potential area for improvement

SALES / MARKETING PROCESS :**Production - Activity base Responsibility:**

- 1 Ensure usage of calibrated Instrument only for measurement
- 2 Periodically review the physical condition of the all instruments for its usage & any damages / deterioration if any
- 3 Ensure immediate withdrawal of any measuring instrument if found damage
- 4 Ensure usage of correct specs (Least count / Range / Accuracy) instrument for particular measurement of dimension
- 5 Ensure proper identification of calibration status on each instrument
- 6 Do the inspection activity of all the product at each stage as per QA Approved Inspection plan
- 7 Define operators' selection criteria (Qualification / experience) for new selection of operator
- 8 Get approval of operator from QA for new operator as well as training of existing operator at new station / activity
- 9 Daily attend the production planning meet
- 10 Daily share the actual production data in planning meet
- 11 Daily plan the machine loading plan in Production log book as per the decision in Planning meet based on Sales requirement / planning requirement
- 12 Inform the known the shortages of RM / Outside process material / Casting / Consumables etc to material & Planning team in planning meet

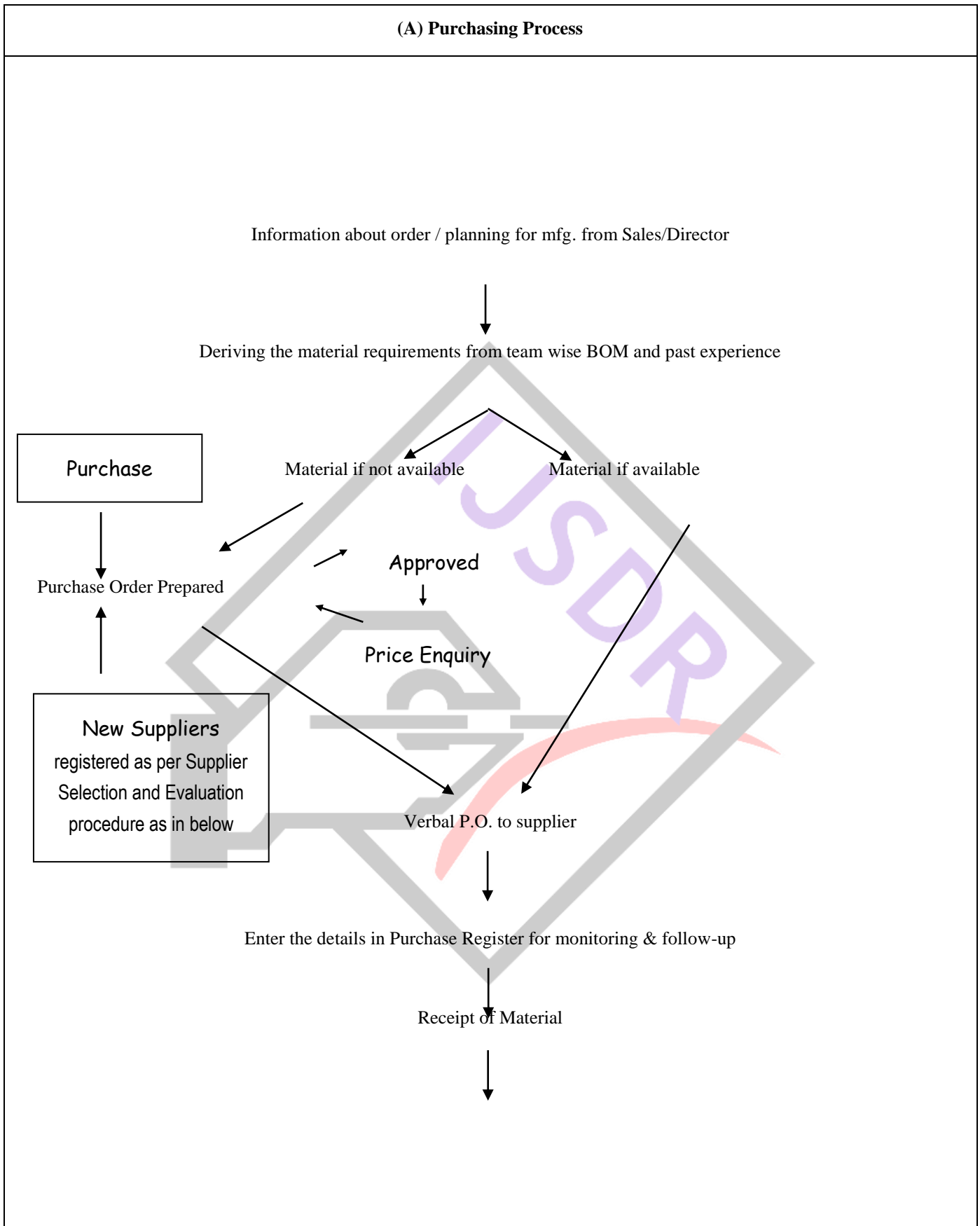
- 13 Daily prepare the Job card for each machine loading plan based on planning meet
- 14 Based on the operator availability (Absenteeism) allocate the operator on station
- 15 Deployment of the operator should be based on sales order requirement & skill of the operator
- 16 Daily provide actual production data to the planning team for the updation of the production planning record
- 17 Daily collect the actual production data from each operator / station wise
- 18 Ensure time frame monitoring & its entry in the job card for productivity monitoring & its improvement
- 19 Ensure periodic preventive maintenance of all the machine
- 20 Daily record & analyze the productivity related data against each station / operator
- 21 Define the tentative time frame for each product / station wise for capacity calculation
- 22 Assist Material person for the verification & approval process for new supplier
- 23 Maintain all records of inspection / other as per requirement
- 24 Analysis of the rework / Rejection / Scrap of RM & Final Product
- 25 Define action plan & take actions based on the Rejection / rework analysis data & if any product related customer feedback
- 26 Co-ordinate with Third party (Customer / Supplier / Third party inspection) for inspection related activity

Process Flow For Production Department



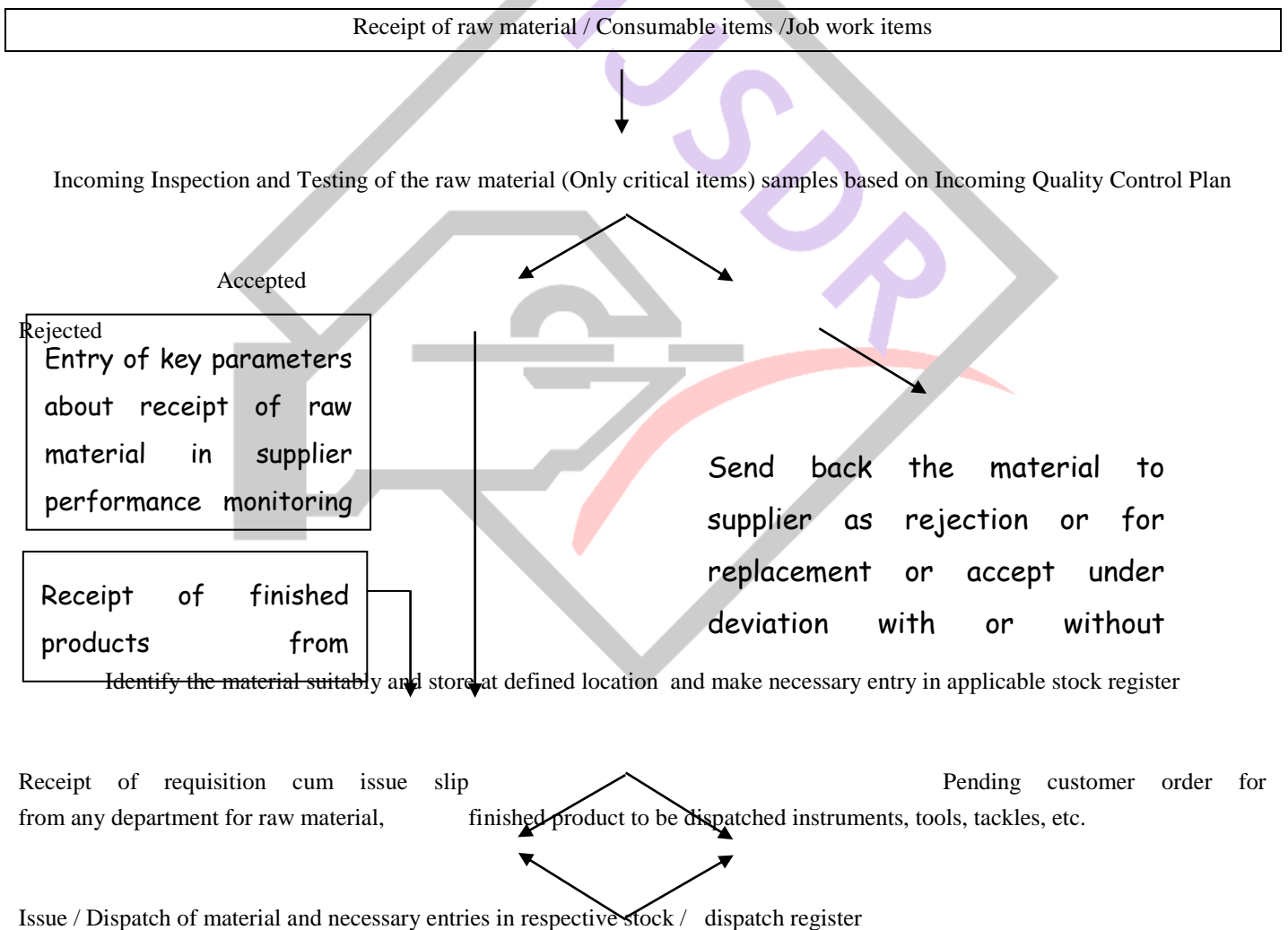
PURCHASE - ACTIVITY BASE RESPONSIBILITY :

- 1 Get quotations from Existing supplier through Hard copy / Email or Fax
- 2 Maintain Quotations file for hard copy quotations
- 3 Take printout of Email quotations & file in Quotations file
- 4 When quotations received, enter the our customer PO / Inquiry detail / no in Quotations
- 5 Daily do follow up with all suppliers (Casting / fabrication / Consumables) for the delivery schedule
- 6 Arrange for the vehicle planning in advance as well as emergency basis for the material availability
- 7 Maintain the tentative time frame (Item / days to procure - for all items) for the standard time of procurement after the placement of order
- 8 Daily attend the production planning meet & be prepared with the necessary data / input for the meeting
- 9 Procure the material as per BOM
- 10 Ensure timely availability of the material to production
- 11 Exercise control over Supplier & Job workers for delivery & Quality
- 12 Constantly evolve the need for the better supplier / new supplier for Cost / Delivery / Quality
- 13 Take actions for the improvement of the supplier for Quality & Delivery
- 14 If any delay in material availability / information received from Supplier , Inform sales & Production person immediately
- 15 Clearly mention the all the necessary purchasing details (material specs / delivery schedule / price / Test certificate / Third party inspection / commercial requirement / any form requirement etc)
- 16 Purchase material (Placement of PO) from Approved supplier list only
- 17 Maintain record of Approved supplier list
- 18 Follow the procedure for "Vendor selection" for including of any new supplier or new material from Existing supplier
- 19 Periodically do the vendor rating as per the defined intervals
- 20 Maintain the minimum stock level for the Consumables
- 21 Procure the material as per Purchase guide line
- 22 Ensure timely availability of the outside process material as per production plan requirement
- 23 Co - ordinate / support & reschedule material availability as per the Sales requirement / urgent customer requirement.



STORE - ACTIVITY BASE RESPONSIBILITY :

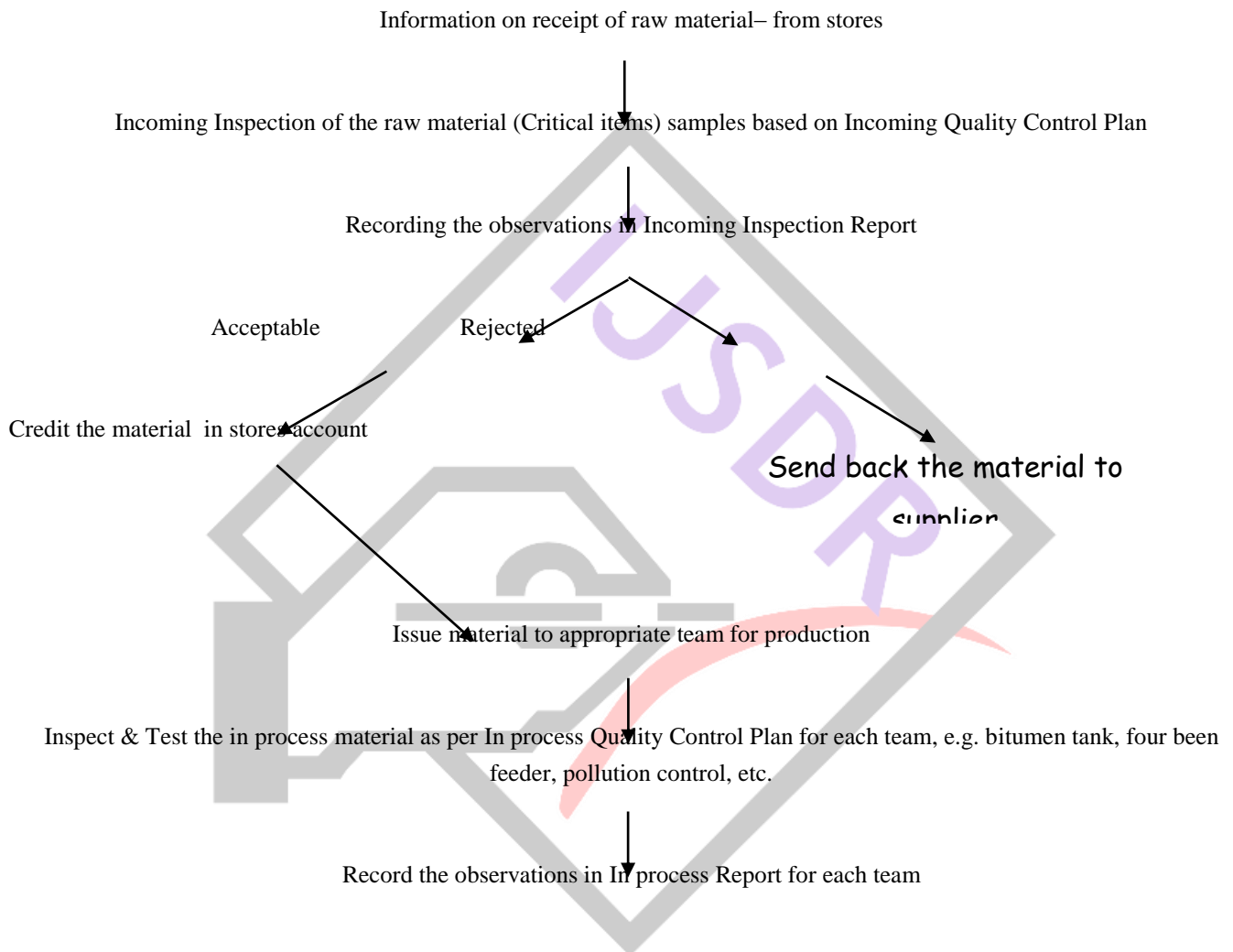
- 1 Daily attend the production planning meet
- 2 Inform the stock level of material / items etc to material / Production / Planning & Sales in planning meet as asked by concern team
- 3 Update & maintain the stock register for each category of itme
- 4 Maintain proper record of material receipt & issuance material
- 5 Donot issue the material to any department without material issuance slip
- 6 Do the receipt of all type of material at Inward store
- 7 Inform the material availability status to concern person as & when received if anything critical
- 8 Do the verification of the material received at inward stage against PO for Qty & necessary documents as per legal & PO requirement
- 9 Inform the material / QA / Production team if any deviation for Qty or any type of other issue
- 10 Maintain the status of the material (Inspection / Non inspected / Rejected / To be rework) properly
- 11 Maintain the proper storage of material condition



QUALITY ASSURANCE & CONTROL - ACTIVITY BASE RESPONSIBILITY :

- Ensure usage of calibrated Instrument only for measurement
- Maintain the master list of calibrated instrument
- Periodically review the physical condition of the all instruments for its usage & any damages / deterioration if any
- Ensure immediate withdrawal of any measuring instrument if found damage
- Ensure usage of correct specs (Least count / Range / Accuracy) instrument for particular measurement of dimension
- Ensure immediate withdrawal of any measuring instrument if found out of calibration as per our requirement
- Ensure proper identification of calibration status on each instrument
- Ensure timely Material testing as per customer requirement if any
- verification of material test report as per customer requirement
- Make Process chart for each product
- Daily attend the production planning meet
- Daily share the product performance data (Specific) & RM quality data in planning meet for the ease of Production & Material team for rescheduling of plans as well communicating improvement action plan to the suppliers
- Do the skill approval of operator
- Co operate with production & material team for the inspection as per the feasibility of the situation (Do onsite / on machine inspection for bulky parts atleast)
- Make Inward inspection plan / criteria for all type of Raw material / Job working material / Consumables etc
- Define the sampling inspection size for each category
- Make in process inspection plan for all product category (Visual inspection / dimensional inspection etc) - for QA
- Make in process inspection plan for all product category (Visual inspection / dimensional inspection etc) - for Production if any
- Make Final product inspection plan for all product category
- Assist Material person for the verification & approval process for new supplier
- Define inspection criteria if any new type of Raw material or new product added in list
- Should have adequate knowledge about the Production / Process / Quality / Inspection facility of the existing supplier & Job workers
- Periodically visit the existing critical supplier at defined intervals / need base for continuous evaluation & improvement
- Approve all GRIN (RM / casting / Consumables etc) as & when material received
- In case of emergency , approve the material at supplier premises
- Maintain all records of inspection / other as per requirement
- Stick / affix identification status (OK / Reject / Rework) on RM / WIP / FGS for initiating necessary actions by Material & Production team
- Re verification / inspection of the RM & Product after suggested rework
- Analysis of the rework / Rejection / Scrap of RM & Final Product
- Define action plan & take actions based on the Rejection / rework analysis data & if any product related customer feedback
- Co-ordinate with Third party (Customer / Supplier / Third party inspection) for inspection related activity
- Follow standard guideline (National & International standard as applicable) for defining / performing inspection activity.

Process floe for Q.C7.5 +8.2.4



ISO 9001:2008 AND FINAL QC REPORT AS DESCRIBED FORMAT :

CAPIOUS ROADTECH PRIVATE LIMITED			
FINAL QC REPORT - AT NO LOAD			
DATE	PRODUCT NAME:		
ST NO	PARAMETERS	REQUIRED VALUE	OBSERVED VALUE
1	RPM Test (Motor)		
2	Hydro test		
	Bitumen Tank		
	Water tank		
3	Velocity measurement - Dryer		
4	Run test		
	Dry temp measurement		
	LOAD		
5	Panel testing		
6	Exhaust fan - CFM		
Test Done by QC Manager			Approved by Director

RESULT & DISCUSSION :

Data Collection helps our team to assess the health of our process. To do so, we must identify the key quality characteristics we will measure, how we will measure them, and what we will do with the data we collect. What exactly is a key quality characteristic? It is a characteristic of the product or service produced by a process that customers have determined is important to them. Key quality characteristics are such things as the speed of delivery of a service, the finish on a set of stainless steel shelves, the precision with which an electronic component is calibrated, or the effectiveness of an administrative response to a tasking by higher authority. Every product or service has multiple key quality characteristics. When we are selecting processes to improve, we need to find out the processes, or process steps, that produce the characteristics our customers perceive as important to product quality.

DATA COLLECTION:

Sr no	Problems	Unit	Defination	Before implementation						
				Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Average
1	Final Rejection	%	No. of products dispatched/No. of rejected by customer	8.10%	7.20%	5.20%	9.23%	10.22%	9.88%	8.3%
2	Machine Breakdown hours	Hrs	No. of HRs machine is not working condition	115	107.5	98	104	99	109	105.4
3	Wrong dispatch / short fall in parts	%	No. of parts dispatched/No. of cases received for wrong parts	13%	11.80%	8.30%	12.88%	12.75%	11.68%	11.7%

(Table: Data Collection before ISO Implementation)

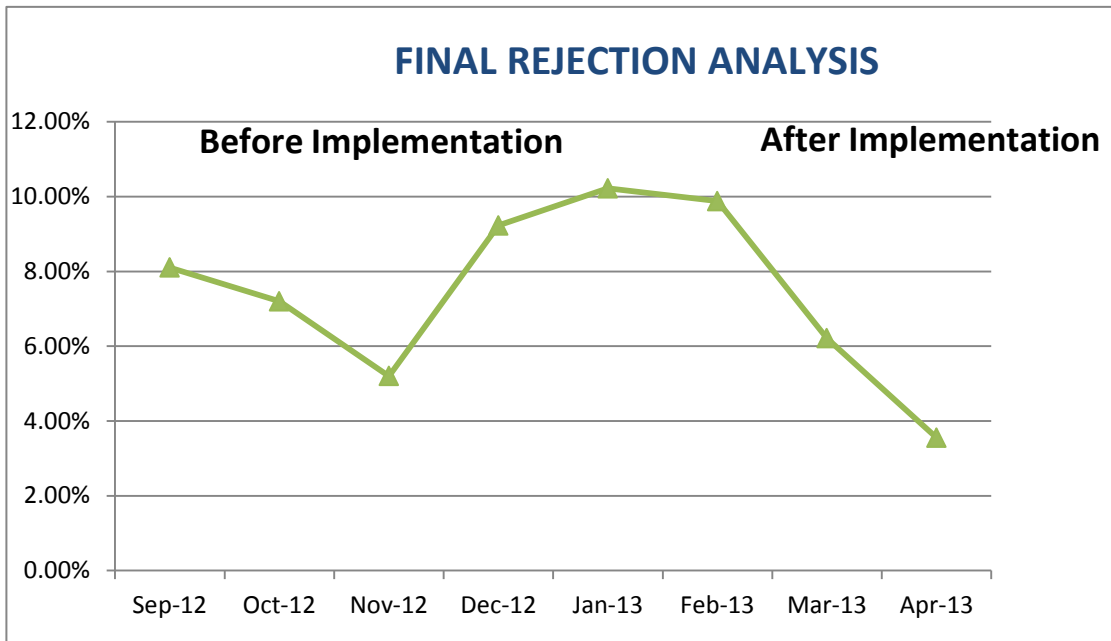
Sr no	Problems	Unit	Defination	After implementation			
				MAR-13	APRIL-13	AVEREGE	
1	Final Rejection	%	No. of products dispatched/No. of rejected by customer	Continuous improvement	6.21 %	3.55 %	4.88 %
2	Machine Breakdown hours	Hrs	No. of HRs machine is not working condition		76	30	53.50 %
3	Wrong dispatch / short fall in parts	%	No. of parts dispatched/No. of cases received for wrong parts		8.01 %	2.0 %	5.06 %

(Table: Data Collection after ISO Implementation)

RESULT:

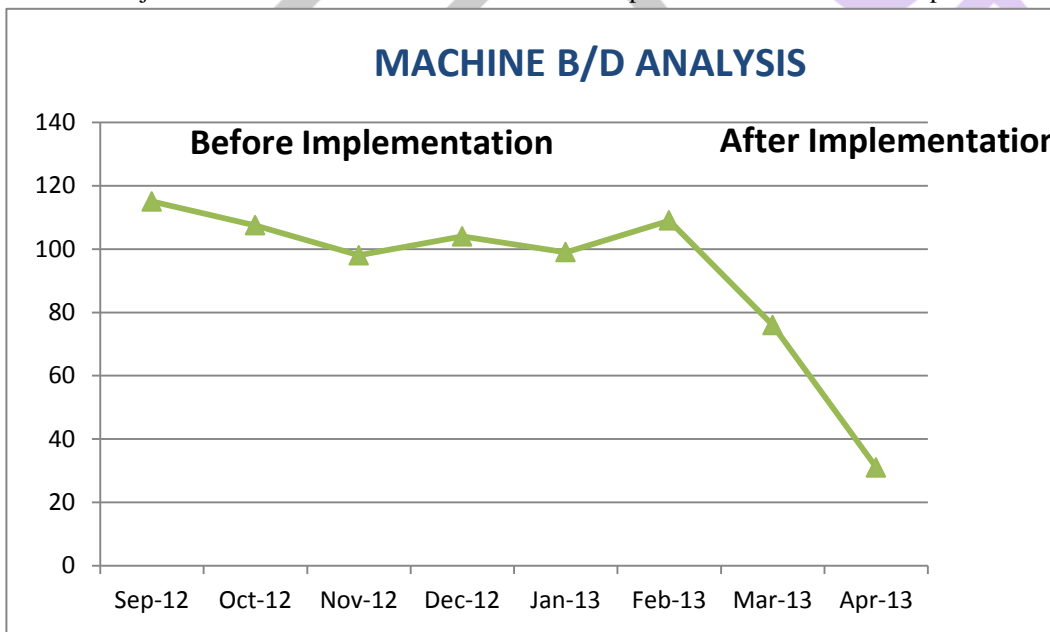
After gathering of different rejection data I found the successful implementation of QMS system in company regarding reduction in rejection.

Based upon that I have compared the data and plotted various graphs as described below



Graph:Final Rejection Comparison

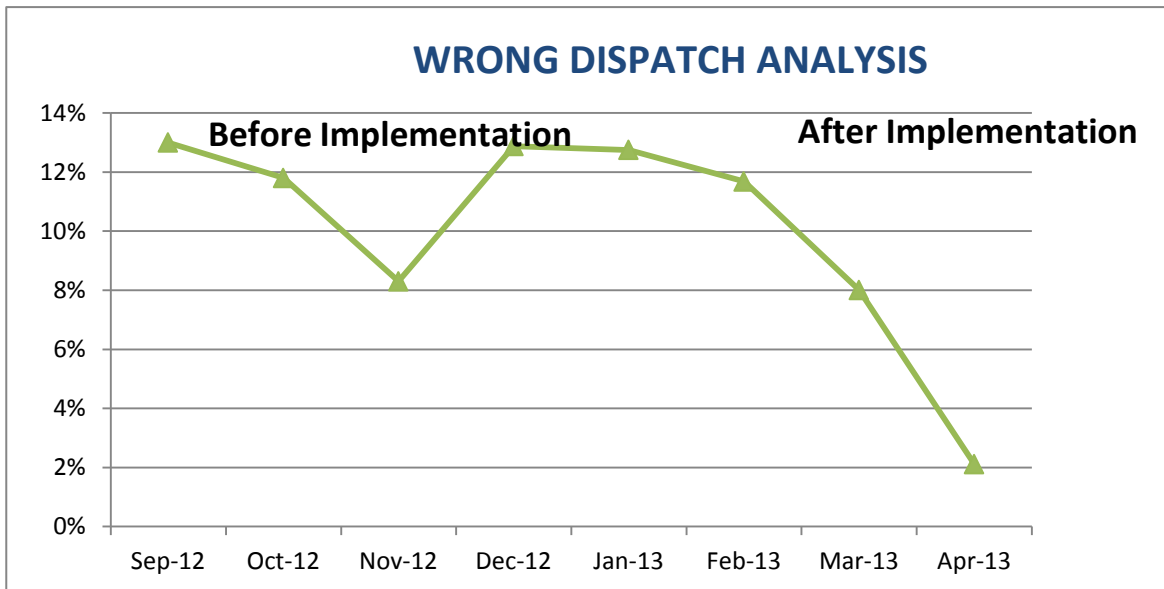
In Process rejection was around 5 to 8.5 % in month of Sep-12 to Nov-12 and after implementation it fall less than 4 %



(Graph:Breakdown Comparison of Machine in plant)

The primary goal of maintenance is to avoid or mitigate the consequences of failure of equipment. This may be by preventing the failure before it actually occurs which Planned Maintenance and Condition Based Maintenance help to achieve. It is designed to preserve and restore equipment reliability by replacing worn components before they actually fail. Preventive maintenance activities include partial or complete overhauls at specified periods, oil changes, lubrication and so on. In addition, workers can record equipment deterioration so they know to replace or repair worn parts before they cause system failure. The ideal preventive maintenance program would prevent all equipment failure before it occurs.

Graph shows comparison and impact of Preventive maintenance in company



(Graph: Comparison of Wrong Dispatch of Parts)

Knowing the contributors to down time and getting to root causes to drive positive impact requires graphical tools without complex research. Data without the benefit of knowing where to focus only distracts resources. So Dispatch lowers the threshold to gaining access to this critical benefit through pre-defined best-practice reports. Years of experience have been invested to provide the right information and a unique phased deployment methodology that achieves a continuous culture, eliminates waste and drives immediate improvements in both efficiency and operational availability.

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