
		STANDARD PROCEDURE 			Procedure for Inprocess Inspection
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PAGE NO.	Issue	Rev.	REASON FOR CHANGE	DATE
All	01	00	New Document Release	1-Jun-14
All	01	01	Inspection report sheets are derived from Process sheet included at pt.4	4th Aug 2014
All	01	02	After tool change indpection to be done and data to be recorded in inspection check sheet	30th Oct. 2014
All	01	03	Check , verify & approval of setting approval added at pt. 2 & List of Mfg. process auditor is added (pt. no.12) & Product auditor is added	30th Jan.2015
All	01	04	New Issue of IMS manual	1 st April.15
All	01	05	Setting approval approved by production & QA added at point no.2	05th Aug.15
All	01	01	Check , verify & approval of setting approval added at pt. 2 & List of Mfg. process auditor is added (pt. no.12)	16-Nov-15
All	01	02	Display of poka- yoke , verification of poka-yoke is added at pt.8	20th Feb.17
All	02'	00	New Document Release	8-May-17

Prepared By	Checked By	Approved By	Released By

Major Links To :

MD	Director- HR	Director-Purchase , Sales	Director- Finance & Account , FC,IT
Head- HT & Forging	Head- Factory Control	Head - PE	
Quality Assurance	Machine Shop		

1.0 Purpose

To establish a Procedure for Inprocess inspection and to ensure that :-

(a) Inspection & testing is performed during manufacturing stages as per respective PQCS / work instructions.

(b) Manufacturing process audit is conducted as per Process Audit Plan.

2.0 Scope

The scope of the procedure covers all processes & products at manufacturing stages.

3.0 Responsibility

Department Head - QA,PE, Mcg., HT & Forg. , Respective Department Heads.

Documents Referenced	Number	Records Referenced	Number
Rule - Product Audit	ISD-QA-018	Manufacturing Process Audit Plan	ISF-PE-002
Lead and Profile Graph Check Rule-4W (Shaving Data Judgement)	ISD-QA-022	Process Audit Report	ISF-PE-003
		Process Audit Plan - HT	ISF-QA-013
		Process Audit Check Sheet -HT	ISF-QA-014
Judgement Rule for Taper Cone grinding roughness Graph	ISD-QA-024	Product Audit Plan	ISF-QA-010
		Product Audit Check Sheet	ISF-QA-012
		Product Audit Plan-HT	ISF-QA-019
Lead and Profile Graph Check Rule-2W (Shaving Data Judgement)	ISD-QA-030	Product Audit Check Sheet-HT	ISF-QA-021
		Setting Approval Sheet	ISF-MS-001
		Daily Checking Sheet	ISF-QA-020
Rule - Before & After Heat treatment Quality Gate	ISD-QA-032	Lot Control & Inspection Check shee	ISF-MS-002
		Inspection Check sheet	ISF-MS-002A
		Lot Quality Check sheet	ISF-FS-007
List of Internal Auditors - Mfg process audit	ISD-PE-003	Process Quality Control sheet	ISF-HF-001
List of Internal Auditors - Product audit	ISD-QA-036	Process Control sheet	ISF-HT-011

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4.0 Procedure

Srl.	Activity	Input	Output	Responsibility
<u>SETTING APPROVAL</u>				
1	Setting Approval is applicable in following condition:- (a) 1) Fixture change,drawbar change,new hob change ,new cutter change (b) After m/c reconditioning (c) After indexing or differential gear change (d) After major breakdown (e) After any change in programming ,tool path change etc (f) After every job setup change.	Setup Change Tool Change Major Maint.	Approval of setting for Mass production	Associate/LA Mcg./HT&Forg
2	A process of setting approval is carried out as per identified parameters as per "SETTING APPROVAL SHEET" Setting approval sheet checked by line leader , approved by shift incharge production and inprocess QA . (inprocess QA DET /AET whose skill level min. 3) Production shall be started after both approval (Prod.& QA)	Setting change	Approved Setting	Associate/LA Mcg./HT&Forg Associate QA
3	For setting approval , if any test in standard room is required, the sample is sent to standard room for checking and <i>to be kept at designated place.</i> <i>Sample is checked in standard room on priority</i> and inspection	PQCS II	Request Form	Associate/LA Mcg./HT&Forg
		Request Form	Inspection	Associate/LA
<u>INPROCESS INSPECTION</u>				
4	Inprocess inspection is carried out as per identified parameters, instruments, sampling plan, acceptance criteria & at the frequency mentioned in respective PQCS - II / Process sheet / work instruction. Lot control & Inspection check sheet (2W) , Inspection check sheet (4W) , Lot Quality Check sheet (CF) , Process quality control sheet (HF), Process control sheet (HT) derived from respective process sheet Ensure 0" adjusting of measurement tool before inspection starts After Insert change inspection done and data to be recorded in inspection check sheet as per process sheet. After tool change inspection done and data to be recorded in setting approval sheet as per process sheet. Lead & profile graph verified as per Lead and Profile Graph Check rule (Shaving data judgement) and follow the Rule Before and after Heat treatment quality gate as it is a Customer requirement For aesthetic decision, make boundary or limit samples and all boundary / limit samples are controlled by putting white mark ,where applicable Taper Roughness varified as per Judgement Rule for Taper Cone grinding graph Records of inspection are maintained in : Mc shop : Lot control & Insp Check sheet-2W , Inspection check sheet-4W Cold Forg : Lot Quality Check sheet Hot Forg : Process Quality Control sheet Heat Treatment : Process Control sheet	PQCS - II / Process Sheet / Work Instruction Process Sheet	Records of Inspection Records of Inspection	Line Associate Mcg./HT&Forg Line Associate Mcg./HT&Forg
		Insert Change	Inspection Check Sheet	LA
		Tool Change	Setting approval Sheet	LA
		Process sheet	Lead & profile Graph	Associate-QA Line leader Associate-Prod. Japnees Lead Members
			Records of Inspection	Associate-QA / Associate- Prod.
		Process sheet	Roughness graph	Associate-QA Line leader
5	Records of inspection are verified & signed by shift incharge, in order to ensure identification of & action on NG points,if any.	Records of Inspection	Verification & Signing	Associate Mcg./HT&Forg
6	Incase of any non-conformance, Reaction Plan mentioned in respective PQCS is followed.	Records of Inspection	Reaction Plan	Associate Mcg./HT&Forg
7	As a Reaction plan for processes, which are not statistically capable or are unstable, NC products are contained or 100 % inspection is carried out, as appropriate.	Records of Inspection	Disposition Report	Associate Mcg./HT&Forg
8	Identification done on poak-yoke where poka-yoke is installed Daily verification of poka-yoke to be done by production Monthly verification of Poka-Yoke to be done at Gemba by QA In case of failure of poka yoke ,100% inspection to be done	Poka- yoke list Check sheet	Identification of poka-yoke Verification record	Associate- Production Associate QA

4.0 Procedure

Srl.	Activity	Input	Output	Responsibility
<u>PRODUCT AUDIT AT MANUFACTURING STAGE</u>				
9	Product Audit is carried out as per "Rule for Product Review & verification of Lot control sheet by shift incharge added Audit". All parts covered atleast once/year . Prepare list of Internal auditor for Mfg. product audit based on their knowledge & Experience and review and update for any change on quarter basis	Rule for Product Audit Knowledge of process & Training	Product Audit Plan Product Audit Report List of Internal auditors - Product audit	Associate Inprocess QA Head - Quality Assurance
10	Any Non-conformance found, is handled as per Procedure for Non-conforming products.	Product Audit Report	Disposal	Associate Mcg./HT&Forg
11	Periodical review of Audit findings is carried out along with Production and Process Engineering and actions to be taken are identified as per Procedure for Corrective & Preventive action	Audit Summary	Corrective Actions	Head Mcg./HT&Forg Head Process Engg Head QA
<u>MANUFACTURING PROCESS AUDIT</u>				
12	Prepare list of Internal auditor for Mfg. process audit based on their knowledge & Experience and review and update for any change on quarter basis.	Knowledge of process & Training	List of Internal auditors - Mfg. Process audit	Head - Process Engineering
13	Prepare a Manufacturing Process Audit Plan. The scope of manufacturing process audit covers the followings :- (a) Effectiveness of the manufacturing processes. (b) Rejection & rework levels. (c) Adherence to process parameters as per PQCS (d) Work environment (e) Critical parameters capability status & validation Process Audit Plan for heat treatment is made by Met Lab.	Quality Manual	Manufacturing Process Audit Plan	Head - Process Engineering
14	Manufacturing Process Audit is conducted at all manufacturing stages as per Manufacturing Process Audit plan. Process Audit in heat treatment is done as per Process Audit Plan - HT.	Quality Manual Manufacturing Process Audit Plan Process Audit Plan-HT	Process Audit Plan - HT Process Audit Report Process Audit Check Sheet -HT	Associate - Met Lab Associates Process Engg Associate - Met Lab
15	Any non-conformance found during audit, is handled as per Procedure for control of Non-conforming products.	Process Audit Report	Disposal	Associates Mcg./HT&Forg
16	Suitable corrective & preventive action is planned & completed effectively as per Procedure for Corrective & Preventive Action.	Process Audit Report	Corrective Actions	Head Mcg./HT&Forg Head Process Engg Head QA
17	Inernal QAV as per PQCT is to be done as per plan Suitable corrective & preventive action is planned & completed effectively as per Procedure for Corrective & Preventive Action.	Internal QAV Plan Audit report	Observations Corrective Actions	Associate QA Head Mcg./HT&Forg Head Process Engg Head QA