







**DELIVERING AN** 

Suppliers Club Society

UNPARALLELED EXPERIENCE

IN AUTOMOTIVE GLASS.



Asahi India Glass Limited

#### **ABOUT AIS**

AIS is India's leading integrated glass solutions company. AIS a dominant player in the glass segment, providing end-to-end solutions to customers, right from the manufacturing of Automotive & Building before glass segment, processing, fabrication and installation services. It is a sand-to-solutions organisation, offering varied glass products and services for institutional buyers as well as retail customers in the domestic and international markets. AIS successfully adheres to the stringent quality norms of both the global and domestic OEMs and strictly follows all Indian and international quality standards.

> **Welcomes You All to HCI Suppliers Club National Kaizen Competition**





**Team** THE OCEAN



- Kaizen Theme: To Eliminate the rejection (CULLET MARK) on I-94
- Month of Implementation :- June 2024

TEAM

Productivity Quality Quality Cost Delivery EHS



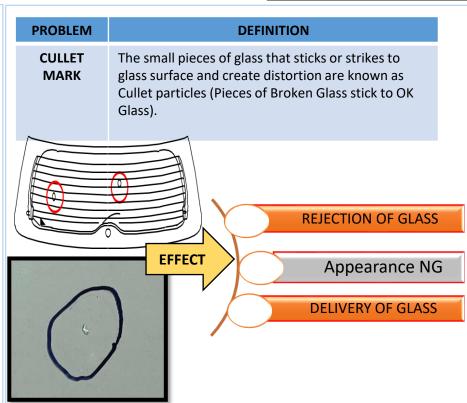
Name: Mr. Sonu Kumar **Department: Production** 

Name: Mr. Bijender **Department: Production** 

- **CFT Formation:**
- Mr. Sachin Saini
- Mr. Sonu Saini
- Mr. Bijender Kumar
- Mr. Rohit (Maintenance)
- Mr. Rajkumar Attri (Electrical Maintenance)

#### **Awards Won**

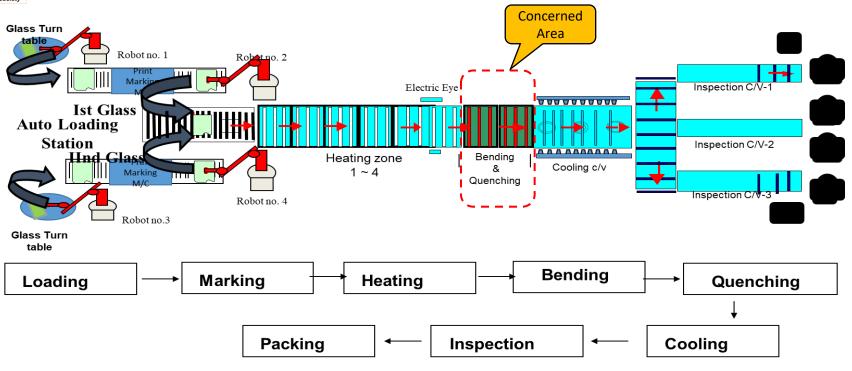
- AIS Internal Quality Circle 1st Runner Up 2023
- AIS Internal Kaizen Competition Winner 2024



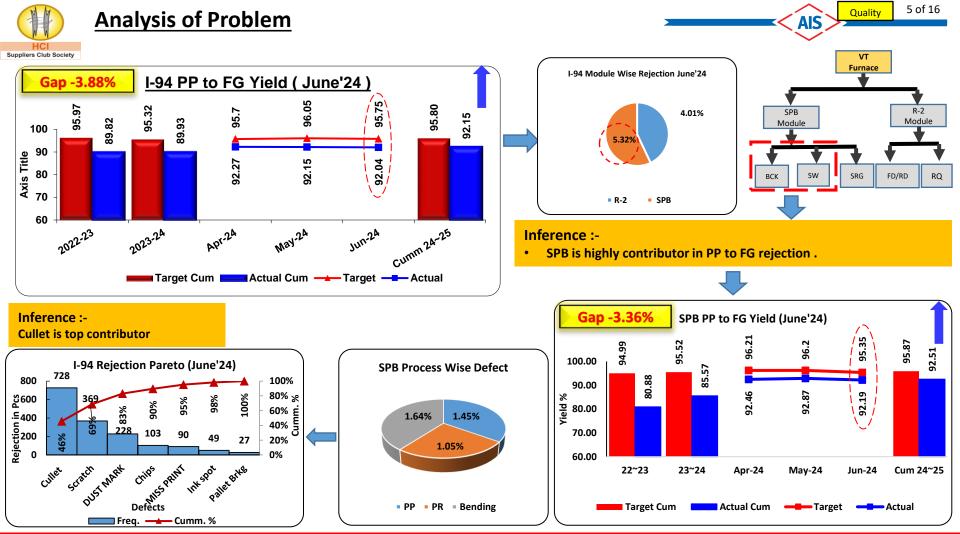


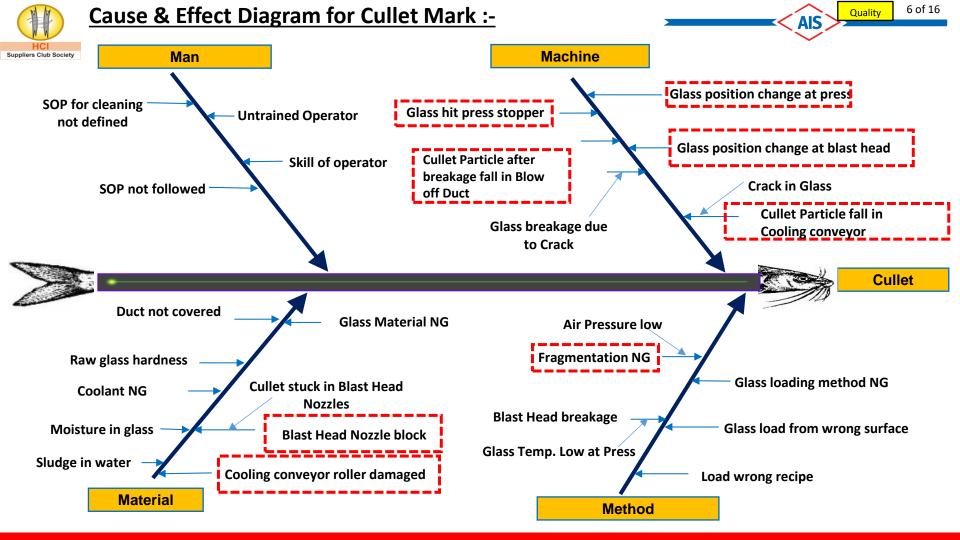
## **Process Mapping:-**





This is the single machine in the plant which can produce side door glass as well as back door glass.







## **Validation of Potential Cause**

< AIS

Quality 7 of 16

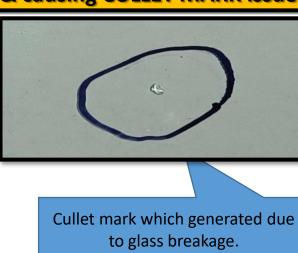
S.No	Potential Causes	Validation Method	Specification	Actual	Judgement		
1.	Glass hit Press Stopper	Gemba	660 mm at P1	320 mm & Glass Crack	Invalid Cause		
2.	Cullet particle after breakage fall in blow off duct	Gemba	No Cullet particles in Blow off Duct	Cullet Particles found in Blow off Duct	Valid Cause		
3.	Blast Head Nozzle block	Gemba	Air should pass through each nozzle	Nozzle condition found OK	Invalid Cause		
4.	Glass position change at blast head	Gemba	Glass not rotate at B/H	Glass rotate at Blast head & break			
5.	Glass hit press stopper	Gemba	As per standard	Observed glass at required position	Invalid Cause		
6.	Cullet Particles fall in Cooling conveyor after Glass breakage	Gemba	Should not worn out	All roller found in good condition .	Invalid Cause		
7.	Inadequate temperature	Gemba	As per program		Invalid Cause		
8.	Fragmentation NG	Gemba	As per program	As per operating condition	Invalid Cause		

Quality

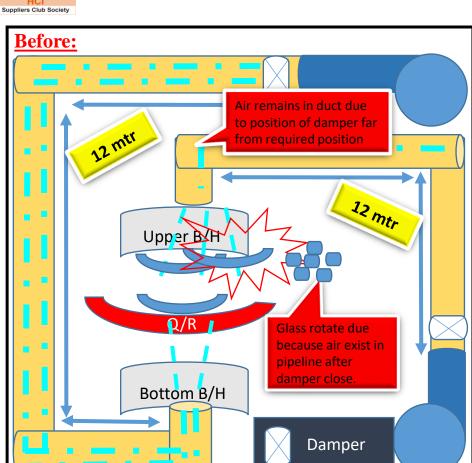
## PROBLEM: Glass breakage issue due to Glass position change & causing CULLET MARK issue.

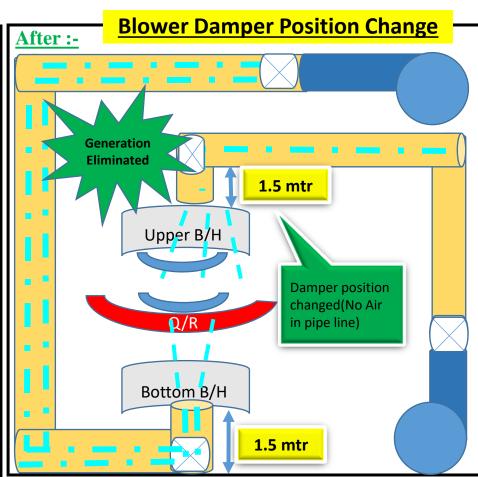
Why 1	Why the Glas	Why the Glass breakage happed at quenching ?											
Ans. 1	Because hit with hard site of blast head .												
Why 2	Why glass hit	Why glass hit with hard site of blast head ?											
Ans. 2	Because glass	Because glass position shift while glass lift up by bottom B/H .											
Why 3	Why glass pos	Why glass position shift while glass lift up by bottom B/H ?											
Ans. 3	Because air fl	ows continuously from upper blast	head .										
Why 4	Why air flows	Why air flows continuously from upper blast head ?											
Ans. 4	Because blower damper install much far .												
ROOT CAU	ROOT CAUSE: Damper position far from blast head . Cause												
ROOT C	ROOT CAUSE - 01 SUGGESTED ACTIONS REMARKS												

			Root	
ROOT CAU	SE: Damper	Cause		
ROOT CA	AUSE - 01	SUGGESTED ACTIONS	REMARKS	
Nozzle not as	s per	Can we reduce the air pressure?	Fragmentation will be NG.	
standard		Can we change the location of blower damper ?	Yes it can be done	1









**KAIZEN NO.:-01** 

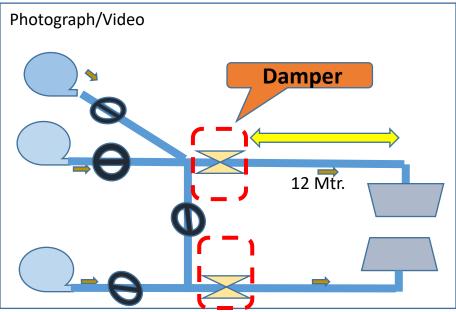
< AIS

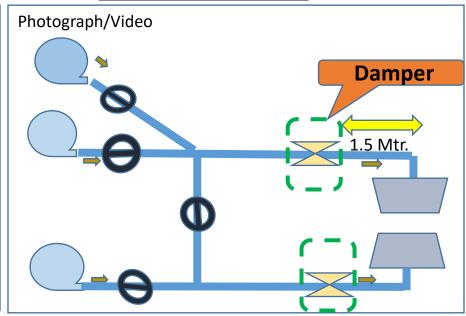
Quality 10 of 16

**Implementation Date :-04-06-24** 

#### **BEFORE KAIZEN**

#### AFTER KAIZEN





#### **Before status:**

Previously damper location was at 12 meter distance so glass rotate in B/H

#### After status:

➤ Now damper position changed from 12 meter to 1.5 meter and now no glass position changes

**Benefits- Reduction in generation of Cullet.** 



## **PROBLEM – Generation of Cullet Mark.**

Ans. 1	Breakage cullet particles hitting the glass.									
Why. 2	Why Breakage cullet particles hitting the glass?									
Ans. 2	Because Blow off duct sending the cullet particles on glass.									
Why 3	Why Blow off duct sending the cullet particles on glass?									
Ans. 3	Because there were cullet particles present inside blow off fins.									
Why .4	Why there were cullet particles present inside blow off fins?									
Ans.4	Because blow off fins are open.  Root									
ROOT CAUSE:- Because blow off fins are open.										

Same and the same
The second second
VENENCE VENENC

ROOT CAUSE 01	Suggested action	REMARKS	
Blow off duct fins	Reduce the Blow off Pressure	Cannot meet the glass blow up properly.	
are open	Provide mesh on the fins of Blow off Duct	Accepted	•

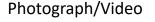
Design weakness in Blow off duct Cullet blow up & hit with glass.

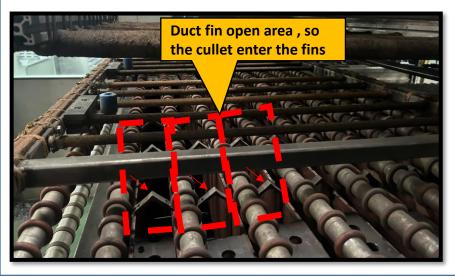
12 of 16

**Implementation Date :-05-06-24** 

#### **BEFORE KAIZEN**

#### **AFTER KAIZEN**







#### Before status:

Earlier at I-94 blow off station, Cullet enters the blow off fins as no coverage provided.

#### After status:

Now we have added mesh (Mesh Size- 4X4 mm) over the fins to stop cullet entry into the fins of Blow off duct.

**Benefits- Reduction in generation of Cullet.** 

**Implementation Date :-04-06-24** 

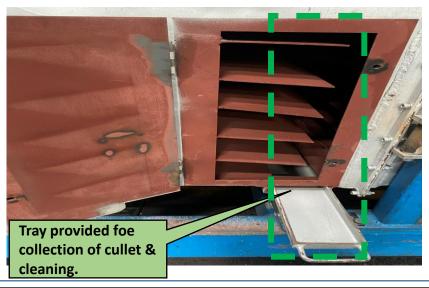
#### **BEFORE KAIZEN**

#### KAIZEN AFTER KAIZEN

#### Photograph/Video



#### Photograph/Video



#### **Before status:**

➤ Earlier at I-94 Cullet Cleaning done using broom inside of cleaning duct, so small particles are left behind

#### After status:

Now we have provided Tray for collection of cullet & cleaning.

**Benefits- Reduction in generation of Cullet.** 

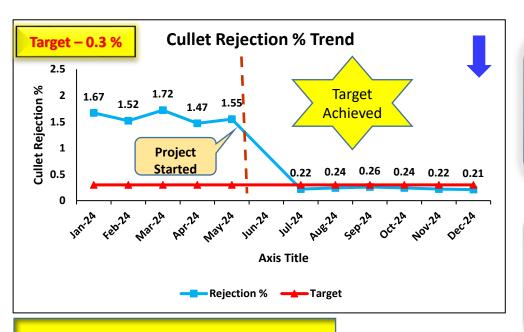
## **Result Monitoring**

(AIS)

Quality 14 of 16

Pls tick the benefits in below heads

	Productivit	ty up %			Quality		Cost Saving In Rs/month		Delivery			EHS			
Process	Material yield improvement	Space saving (sq. ft.)	Other	Rejection reduction (%)		Others	Direct	Notional Lead Time reduction		Customer delivery rating improvement	Others	Effect on Environment	Human Safety	Machine safety	Others
/				<b>/</b>			<b>/</b>			<b>/</b>					<b>/</b>



**Cost Summary:** 

Cost Investment :-

Cost of Damper Relocation - 36870/-

Cost of Mesh : Rs. 13789/-Cost of Tray : Rs. 1200/-

Total cost investment: - 51859/-

#### **Cost Saving:-**

Total cost of glass including RG & Processing Cost :- Rs.375/-

Glass Saving Per Month = 875 pcs

Total glass save per year :- 10500 pcs

Revenue per year by saved glass :- Rs. 39,37,500 /-

Cost Saving excluding investment :- 38,85,641/-

Saving :- Rs. 38,85,641/-



### **Standardization:**

Check Point added in Next Model Tooling Check sheet.

Quality 15 of 16

			1 13 tick	Ville	ochents n	ıbc	IOW IIC	.aus												
		Produ	ıctivity up %			Qua	ality		Co	st Saving I	n Rs/month		Deliver	У		EH	s			
F	rocess	Material improve				Ро	ka yoke	Others		Direct	Notional	Lead Time reduction	Custome delivery rating improveme	Others	Effect on Environment	Human Safety	Machine safety	Others		
_	_					<b>/</b>					<b>/</b>									
		-	I-94 NEXT MODEL TOOL	ING CHECK SHEET SPB					М	IP Informa	tion Sheet				MP In	formation She	et			
		Date :	Shift:	ı/c		3/CK-812 Remarks By	Improvement Th	me: I-94 Furnace		vided Tray for collec		: 04/06/2024		Improvement Theme: I-94 F	umace SPB Tool we have to s	hift damper duct position.	Date: 04/06/2024			
5. No.	ITEM	CHECKING POINT	STANDARD	CHECKING I	METHOD Decision	Tooling	cleaning.				Com	pleted By: R&D		Cause: Wire Mesh added or			Completed By: R&D			
		Surface (2007)	Should be smooth (Smooth 전뒤 덕분지)	Check with the hand feeling (हायों से कुकर पेक करें )			Cause: Cullet Tra	y NA			Equi	pment Name: I-94		Cause: wire mesh added or	I BIOW-OIT DUCT		Equipment Name: I-94			
		Vacuum Pipe	Should not damaged (Damaged नहीं होना चाहिए)	Check with the hand feeling there is no leakage (हाथों से सुकर पेक करें की पाइप में कोई लेकिन न	in pipe						_						Pillar Name:Jesu Hozen			
		(वेश्यूम पाइप )		(हाथी से कुकर चेक करे की पाइप में कोई लेकिना न	₫1)						Pillar	Name:Jesu Hozen								
		,	No dust or cullet particle should be on the dott     auch up and now with service up/harm in at a	Check the surface of the cloth visually			Section: AFX&VT Plant							Section: AFX&VT Plant						
1	Mold	Surface Of cloth (कपठे का सतह)	2. Cloth should not be form (कराई कर स्टाह करें Visually पैक करें )				Members of Steering Committee Sign. Target of Improvement Effect: Cullet particle stuck in Glass during Quenching.							Members of Steering Committee   Sign.   Target of Improvement   Effect: Glass position rotate during quench   at Blast Head.				rotate during quenching		
			(कपडा फरा हुआ न हो )									nching.		A)Daywarday Claub	d Mai	ntainability	at Blast Head.			
		Cloth loseness (कपटे का टीलापन )	No Looseness (Should be properly tight) (कपटे में दीलायन न हो ( कपटा चादमा हो ))	Tighten it with the help of clamp & check looser ( Clamp की सहायता से टाइट करें और हाथी से छ व	ess with hand feeling म चंक करें की कपटे में डीलायन न हो )		1)Devender Singh			1. Maintainability 2. Operatability				Devender Singh     Mahesh Namdev		atability				
		All Nuts & Bolts (सभी नटस और बोस्टस )	Should be tight	Check by hand , Bolts should be tight (हाथों से एकर चेक करे की golt दीला न हो)			2) Mahesh Namdev			2. Operatability 3. Safety				2) Wallesh Namuev	3. Safe		-			
		Dre. Enemine Soller sleeve	(Tight 計刊 項款)			_	3) Kuldeen Kaus	3. Safety  Muldeen Kaushik  4. Economic Viability						3) Kuldeep Kaushik 4. Economic Viability						
		(प्री फॉर्मिंग रोतर स्लीब्स )	No sleeve damage & properly tighten ( स्टॉन्स Damaged नहीं होना चाहिए और टाइट हो)	Check visually (Visually 학화 작건 )			y reaces in S. Eucliditic visionity S. Fleshity S. Fleshity S. Fleshity													
2	re- Forming Roller	Pre-Forming Roller chain & bearing (प्री परीमेंग रोतर chain & bearing)	Should be properly tight & well lubricated (Tight और well lubricated होना चोहिए)	Check by hand, bearing & chain should move sm (हायों से कुकर चेक करे की Bearing और Chain सर	oothly. TEEL H Move 307 )									•						
		No. Of Pre-Forming Roller	As per model specific	As per Job Standard (PD/PN/JS-21)																
		(प्री फॉर्मिंग रोलर की संख्या ) Quench ring Thread	( Model 市 米円可尺 ) No damage & No cullet	(Job Standard (PD/PN/IS-21) 市 研究で) Check visually there should not be no cut /Culle	& should be nonedy tight	_								4						
		(Duench रिग का भागा )	(Damaged नहीं होना चाहिए और कुरलंट पार्टकरा न होना चाहिए)	(Visually प्रेक करे कि धना कहीं से कटा हुआ हो न			Description of Improvement required							Description of Improvement required						
		Aliahoment level	Alighormant should be group on both side	Check on the surface plate																
		(पीक्षा लगाने का काम)	(पीकी दोनों तरफ से बराबर हो )	(Plate संतर् को Check करें )									The second second							
3	Quench Ring	Nut & Bolt (नटस और बोल्टस )	Should be properly tight	Check by hand (राधी में चैक करे।			Design Name of			10										
		Quench ring Preumatic Pipe	Should be properly tight & well lubricated	Check by hand										11 +	Charge to charge the avenue	Sangrati	on and			
		(Quench रिंग ह्या की Pipe) Quench ring Teeth/Chip level	(Tight और well lubricated होना पादिए) Not touch with the glass	(हायों से पेक करें ) Put the glass on quench ring and check visually.			THE REAL PROPERTY AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN	let Cleaning done	meine broom					12 mil				()		
		(Quench RPI Teeth/Chip (RRT)	(Glass से Touch न करे)	(Glass की Quench रिंग पर रख कर Visually check			ins	ide of cleaning du	ct, so small				ALC: NO.		1 /100	1	1.5 mts			
		Cleaniness	No cullet inside the blast heads (Blast head 참 사당로 하는 화면은 구원 )	Check the cullet in between blast head nozzles । (टॉर्च की सहायता से यह सुनिश्चित करे की Blast Hea	with torch there should be no cullet		pa	ticles are left beh	ind		50			Upmer 6	and a second	4 1	Upper B/H			
		All Nuts, Bolts & bearings स्थानिकास बोक्स्स और केअरिया ।	Should be tight and well lubricated	Check visually all bearings should move smooth (हार्यों से कुकर फेंक करें की Bearing सरतता से Mo	ly		The second second				-				WW.	11		Contract Con		
		(सभी नट्स,बोस्ट्स और बेअरिंग )	(Tight और well lubricated होना पाहिए)	(हाथों से कुकर फेक करे की Bearing सरतता से Mo	ur करें )		2		-	- MI /-		1		Q/R	Andrew Posterior Charles		P/R	to pape firm)		
	Blast Head	(Holes)	No damage ( Damage नहीं होना पहिए)	See the blast head nozzles with the help of torci গৌৰ কী মন্ত্ৰমন্ত্ৰী কী Blast Head Holes কা নিমিঞ্জ	s करें)									Bottom	it inquities after		Bottom B/H			
4	Blast Head	Strip Felt (नोजरा स्बर केय )	No Damage ( Damage नहीं होना चाहिए)	See the blast head nozzles rubber cap with the h (टोपे की सहायता से Blast Head नीज़त रबर केय का				The Real Property lies	Name of Street		Tray provided foe collection of cullet &			Bottom	3/н		T +			
		(HMC ERE DU) Hose pipe		City का शहरपटा से Blast Head नागत स्वर कर कर Check manually for leakage शक्ति के शिए Manually पैक करें)	Hittigri det )	_			100		cleaning.			the commence of the commence of	Damper	Damper 1.5 mtr				
		(होज पाइप )	No leakage (सीवेन्स न हो )				If approved by S	teering Committee	encircle the ap	opropriate detail in e	ach column			If approved by Steering Cor	nmittee encircle the appropriate	e detail in each column				
		82 catcher cart covering (82 catcher cart 神 covering)	Proper cover with the cloth (कपडे से अच्छी तरह दका हो )	Check visually (Visually 中華 本年)			Classificat		Cause		Priority Concern Depart		ation	Classification		mentation Priority Concer		tandardisation		
		Blow Off Cleaning tray	Take trayout & empty in cullet tank	Check Visually			1. Change in des			1. Must		Maint 1. Engg. Drawing.			Design failure 1. Must		hanical Maint 1. Engg. Dra			
5	Blow Off	Blow off mess condition	No wear & tear	Checkvisually			2. Change in ope	ration Less pro chanical 4. Assen	ocess capability	2. Desirable	Production.     NMD	Job Standard     Training Document			Less process capability 2. Design . Assembly defect 4	rable 2. Prod 4. NMI	uction. 2. Job Stand 2. Job Stand 4. Training D			
		Surface	Should be smooth	Check with the hand feeling		$\vdash$	<ol> <li>Change in me</li> <li>Change in raw</li> </ol>		nony defect	5	4. NMD 5. R&D	<ol> <li>Training Document</li> <li>Safety Documents</li> </ol>		Change in mechanical 4     Change in raw material 5	. Assembly detect 4	4. NM				
		(स्तर)	(Smooth होना चाहिए)	(हाथी से कुकर पेक करे )		$\perp$	Change in raw     Change parts	6		6	6	6		Change parts     Change parts	6	6	6			
		Surface Of the cloth (कपटे का सरहा)	No dust or cullet particle should be on the cloth (कपटे पर कोर्ड डस्ट और करलेट पार्टिकल न हो )	Check the surface of the cloth with hand feeling (हायों से कुकर चेक करे की पाइप में कोई लेकिन न	हो।		6. Others	7		7	7	7		6. Others 7	7	7	7			
		Cloth looseness	No Looseness (Should be properly tight)	Tighten it with the wire & check looseness with ( Wire की सहायता से टाइट करें और हाथी से छु कर	hand feeting			Tr.		Route of A	Approval				•	Route of Approval	· ·			
5	Bending Ring	(कपर्ट का दीलापन ) All nuts & bolts	(कपडे में डीलायन न हो (कपडा TIGHT हो )) Should be tieft	( Wire की सहायता से टाइट कर और हाथी से छु कर Check by hand, Bolts should be tight	चक कर का कपड म द्वाराम्भ ने ही )	-	Originator	Approve	r(HOD)		Steering Committee	Registration Code:		Originator A	pprover(HOD)	Steering Commit		Code:		
		सा गया ६ वर्गाः (सभी नटस और बॉस्टस )	(Tight SHI पारिए)	(हार्या से क्रकर चेक करे की polt दीता न हो)		1				Yes		ept				res .	Accept			

## Horizontally Deployed in AIS-Chennai & AGC Thailand.

MPIS sheets for New SPB Module.

Plese tick(w) if the improvement car

or use in I-95 Furnace.







TO FURTHER REDUCE JOB CHANGE TIME OF I-94

\*

# **YOUR Questions and Valuable suggestions are Welcome**

\\*