



HCI

Suppliers Club Society

Kaizen Presentation

Kaizen Theme: Built-in Quality through Automation – Zero Defect Outflow

Date of Implementation: 26-09-2025

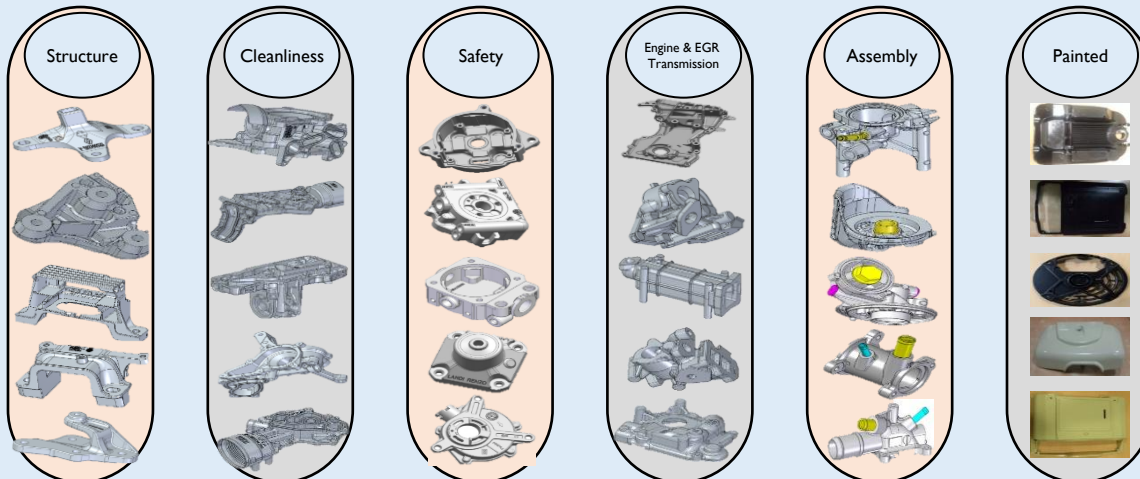
Quality

Company Introduction

Name: Maxop Engineering Pvt. Ltd. Manesar

Product: HPDC Aluminium Automotive Parts

OUR PRODUCTS



Team Introduction



Name: Dinesh kumar

Designation: Sr. Engineer

Department: HPDC



Name: Navneet Pandey

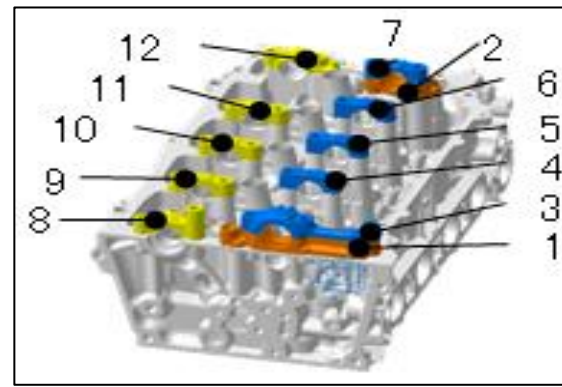
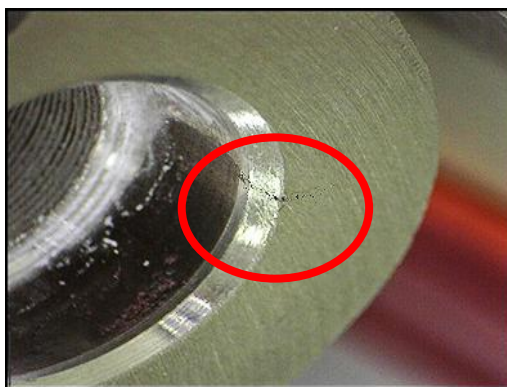
Designation: Engineer

Department: HPDC



Problem Identification And Simulation Correlation

Problem	Porosity Issue Observed
Part Name	Holder-235
Date	09-Aug'25
How Many	01 Nos
Where	Quality Wall Inspection
Method of Insp	Visual
Customer	HONDA



Simulation Result:

This type of part is produced during Start-up shots of the Die.

Melting of ADC-12

HPDC

Trimming

Vibro & Drying

FIC

VMC M/C

Occurrence

PDI and packaging

Quality Wall Inspection

Camera Vision

Final Inspection

Dowel Assy

Detection

Outflow



#	Stage	Gap Area	Existing Controls	Actual Genba Facts	Action Plan	Responsibility	Status
1	HPDC	Operator may skip or mix the Start-up shot or parameter Ng with OK parts and move it to next step.	Operator produced and reject start-up shots manually as per WI (W14-P-DC-01)	During Genba we find out that operator mix the startup shots with ok shots based on their visual observation.	Need to eliminate manpower dependency for the rejection of Start-up shots as well as Machine NG parts.	Mr. Dinesh Kumar	Done

The defected part was produced in HPDC and simulation confirmed that the same defect is occurred during start-up shots.



Kaizen Presentation

ma^xop

eminence with excellence...

BEFORE KAIZEN

AFTER KAIZEN

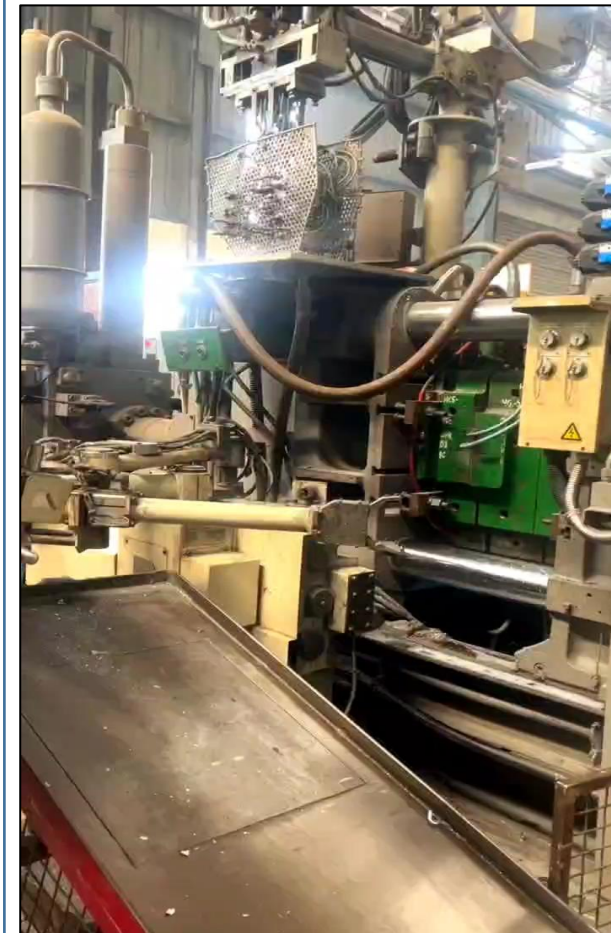


ITEM	V1	V2	V3	V4	ACCEL. POINT	DECEL. POINT	P. RISE HP	BISCUIT THICKNESS	CYCLE TIME
	m/s	m/s	m/s	m/s	mm	mm	HPA	mm	s
MONITOR	0.118	0.148	0.198	3.228	352	435	86.5	0.022	39.6
MASTER	0.100	0.150	0.200	3.500	340	450	80.0	0.030	40.0
STRANGE	0.050	0.050	0.050	0.500	10	10	10.0	0.020	5
SELECT	ON	ON	ON	ON	OFF	OFF	ON	OFF	OFF
STOP	0	0	0	0	0	0	0	0	0
ALARM	0	0	0	0	0	0	0	0	0
RESET	0	0	0	0	0	0	0	0	0
MEASURING	100	200	330	387	2,000	1,000			

OFF SHOT COUNTER ma^xop 16:33

AFTER 1 MIN STOP	2	RUNING TIME	0
AFTER 3 MIN STOP	2	DEALY TIME	46
AFTER 5 MIN STOP	3	POWER OFF DEAL	-23
AFTER 10 MIN STOP	3	RESET ALL	
HIGHT SHOT 15 MIN	3 + 5	BYPASS	
HPDC CYCLE TIME	64		

MENU USER LOGIN ALARM



Before:-

1. Manpower dependency for rejecting the Start-up shots.
2. No automated system available to reject parameter NG parts
3. Defective parts moved to the next stage.

After:-

1. Start-up shot and Parameter NG part automatically rejected through Auto scrapper.
2. Start-up shot are produced automatically as per defined criteria in WI.
3. This system ensures **immediate rejection** and significantly **reduces manpower dependency**.



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Kaizen Presentation Benefits

Pls tick ✓ the benefits in below heads

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

LIST OF GADGETS USED



CABLE FOR COMMUNICATION OF HMI (DOP-B03S211) TO PLC(DVP28SV)



CYLINDER PNEUMATIC A 120 50 160 MAKE JANATICS



SOLENOID VALVE PNEUMATIC MODEL-RCS2406D24L



FLOW CONTROL VALVE 1/4" X 8 MM

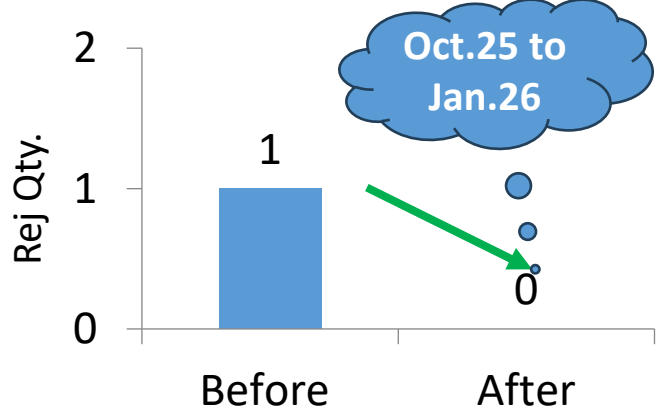


PUSH ON BRASS CONNECTOR 1/4" X 8 MM

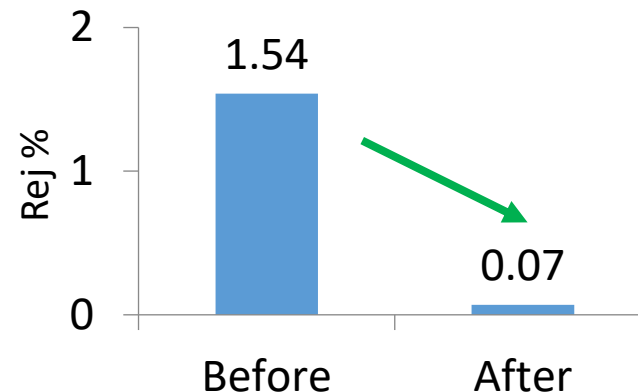


PLC MODEL-DVP28SV

Porosity rejection at Quality wall



Visual Defect Skip Rate (HPDC → FIC)



Cost Saving

Average Production: 4.0 Lac
Part saved @1.54% : 6160

Process Cost (Trim., Fett., S&B) = 15400 Rs

Inspection Cost = 3125 Rs

Total Cost per Month = 18525 RS
Per Year Saving = 18525*12
= **2.22 Lac**

Group Lvl. Saving/Year
= **27.72 lac**

Implementation Cost: 22000 Rs

Horizontal Deployment:- Auto Scraper Poka-yoke Implemented On all machine at Group level.



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STANDARDIZATION AND DOCUMENTATION

S.No.	STANDARDIZED DOCUMENTS
1	Master List of POKA YOKE
2	POKA YOKE Verification Check sheet
3	HPDC Daily Start-up Check sheet
4	Control Plan
5	PFMEA

PY 14	Auto Scraper	To Reject The Initial Shot When Run The Die	PROCESS ENGR.	As per WI (W14-P-DC-01)	Every Loading	Poka Yoke Verification check sheet F06-P-QA-01
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Poka Yoke Verification Check sheet

CONTROL PLAN

PROCESS QUALITY CONTROL TABLE (C)													
PROCESS NAME	DESCRIPTION	STANDARD	UNIT	TEST METHOD	REQUENCY	TEST POINT	TEST POINT	CONTROL PLAN	DATE	TEST METHOD	REQUENCY	TEST POINT	TEST POINT
High Pressure die casting 100T & inspection (HPDC-45,71)	1. SURFACE TREATMENT (HPDC-45,71)	100T	HPDC-45,71	100T	100T	100T	100T	100T	100T	100T	100T	100T	100T
	2. HATCHING (HPDC-45,71)	100T	HPDC-45,71	100T	100T	100T	100T	100T	100T	100T	100T	100T	100T
	3. HATCHING (HPDC-45,71)	100T	HPDC-45,71	100T	100T	100T	100T	100T	100T	100T	100T	100T	100T
	4. HATCHING (HPDC-45,71)	100T	HPDC-45,71	100T	100T	100T	100T	100T	100T	100T	100T	100T	100T

2	HPDC-71 350 TON	Process	PDC -PY-9	HOOD BKT LH/RH RAIN FORCEMENT LH/RH,HSG 544,HSG944,DISC YCA,CONT. ROD 859	AUTO SCRAPER	TO REJECT THE INITIAL SHOT WHEN RUN THE DIE. & Reject the parts when critical parameter goes out of spec.	Part will automaticall got rejected when machine stop for some time. By the help of process Engineer check the biscuit thickness running spec & extractor put part in rejection bin.	Quality Engineer Weekly
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शिफ्ट की शुरुआत में चैक करे की आटो स्कैपर पोका योके काम कर रहा है या नहीं।	आटो स्कैपर पोका योके काम करना चाहिए।	देख कर	प्रतिदिन हर पाली में एक बार	S1 S2
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HPDC Daily Startup Check sheet

OPERATOR TRAINING

AUTO SCRAPER POKA-YOKE APPROVED BY HCIL TAPUKARA



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Thank
you

