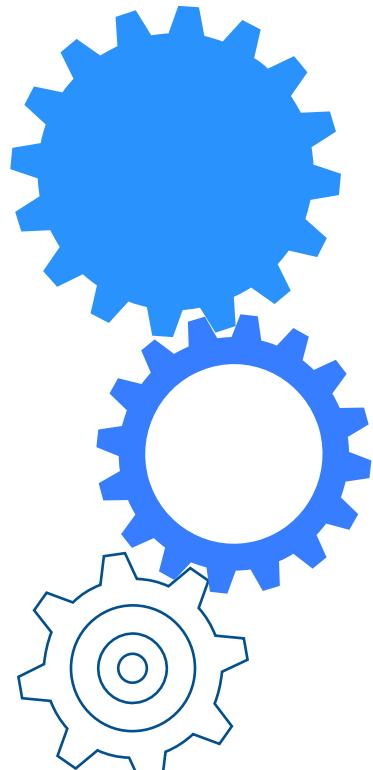
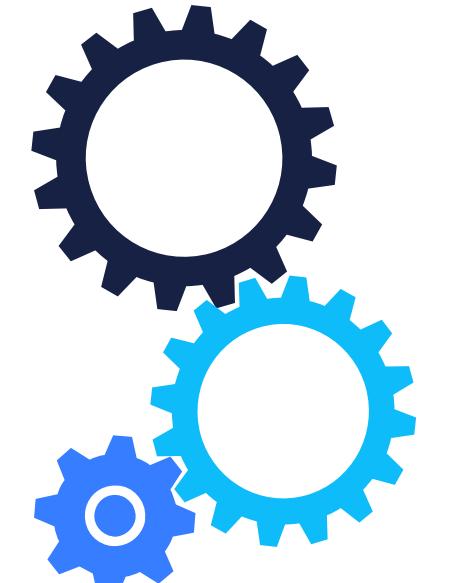




PT. TOYOTA MOTOR MFG INDONESIA
Engine Production Karawang Division, Plant #3



White Lion
Circle Managing Activity



TOYOTA
Berbagi
Bersama Membangun Indonesia



Pengenalan Area Kerja



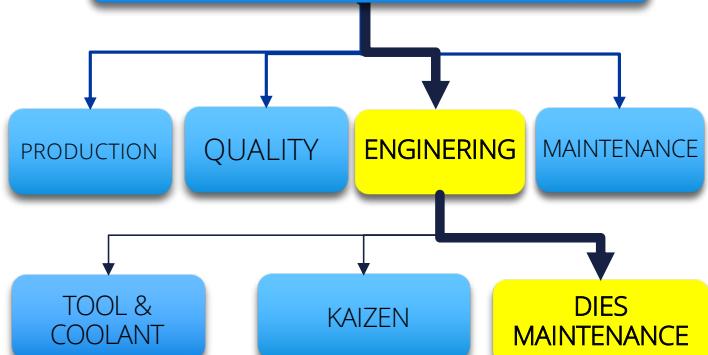
Product Casting

Cylinder Block
(DieCasting)

Cylinder Head
(Low Pressure)



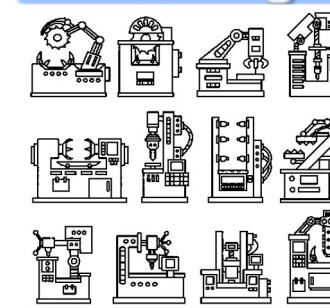
ENGINE PRODUCTION KARAWANG DIV



Engine Assembly



Machining



Casting



STEP 0 – 1 PEMILIHAN THEMA

	Member Voice	Parameter				Total	Rank
		Efficiency	Frequency	Skill	Time		
	Agung. I	Frekuensi problem temperatur low pada outer die tinggi	3	3	2	3	11
	Alam. I	Shootblast sering problem, coating menjadi terhambat	2	2	1	2	7
	M. Akbar	Kajiri pada water jacket tinggi	2	2	1	1	6
	Vicky. I	Repair area C4 problem kurokawa sering	2	1	1	1	5



Efficiency :

- 1. < 25 %
- 2. 50 %
- 3. > 75 %

Frequency :

- 1. Jarang
- 2. Sering
- 3. Sangat sering

Skill :

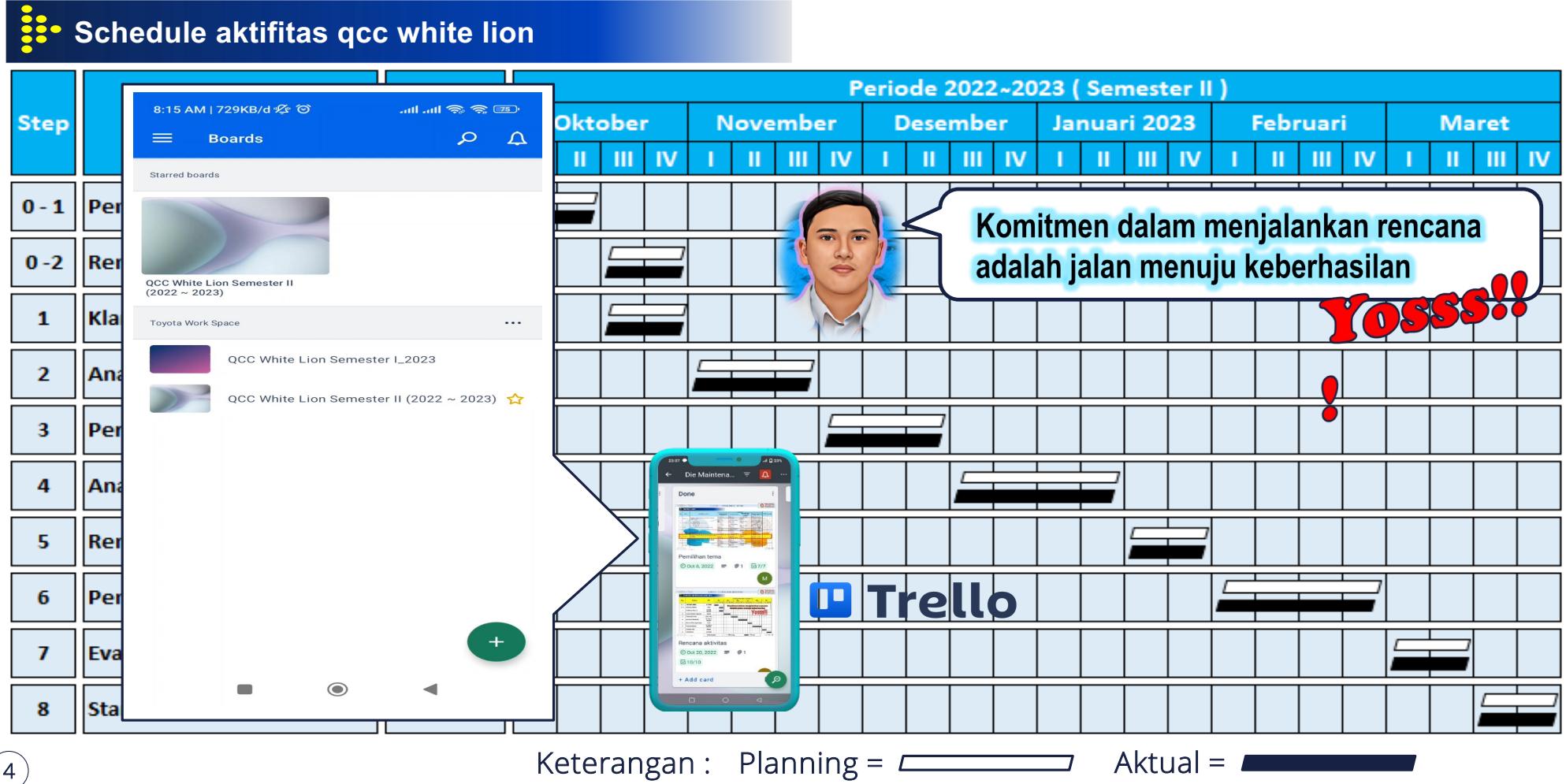
- 1. Tidak bisa
- 2. Bisa

Time :

- 1. Selesai > 6 bulan
- 2. Selesai 4-6 bulan
- 3. Selesai < 4 bulan

STEP 0 – 2 RENCANA AKTIFITAS

Schedule aktifitas qcc white lion



The Trello board has a sidebar with steps 0-1 through 8:

- 0 - 1 Per
- 0 - 2 Ren
- 1 Kla
- 2 Ana
- 3 Per
- 4 Ana
- 5 Ren
- 6 Per
- 7 Eva
- 8 Sta

The main board area shows a timeline from Oktober 2022 to Maret 2023. A speech bubble contains the text: "Komitmen dalam menjalankan rencana adalah jalan menuju keberhasilan". Below it, the word "Yosss!!" is written in red. A smartphone icon at the bottom shows a Trello card for "Die Maintenance".

Keterangan : Planning =  Aktual = 



STEP 1. KLARIFIKASI MASALAH

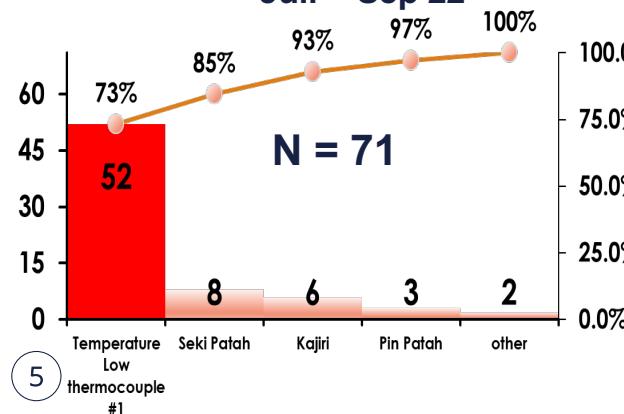
**Problem Die di Line LP
Juli ~ Sep 22**



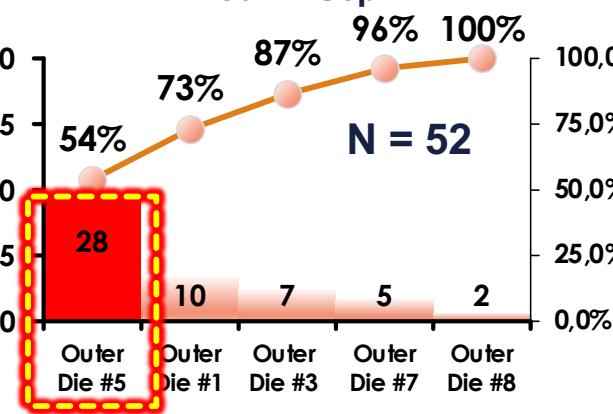
Pareto problem die di line LP pada outer die Juli ~ Sep 22



Pareto problem die di line LP pada outer die Juli ~ Sep 22

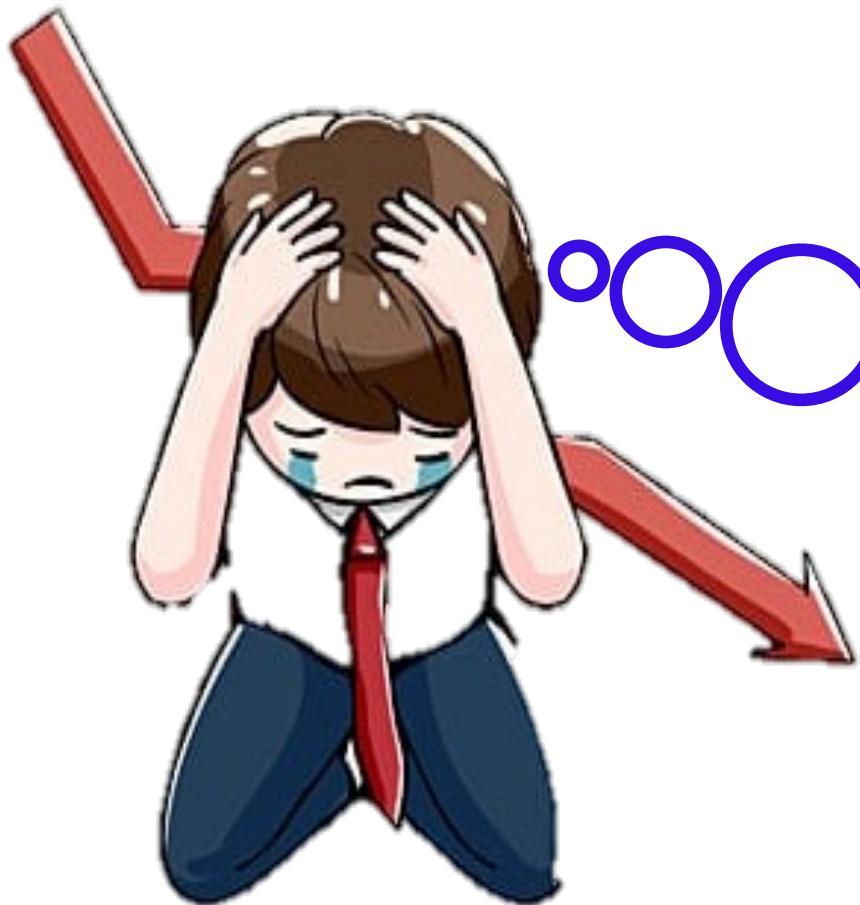


Pareto problem themperature Low berdasarkan die Juli ~ Sep 22



**Thema QCC kami adalah :
Menanggulangi problem
Temperature low
thermocouple #1 pada outer
die #5 di line LP**

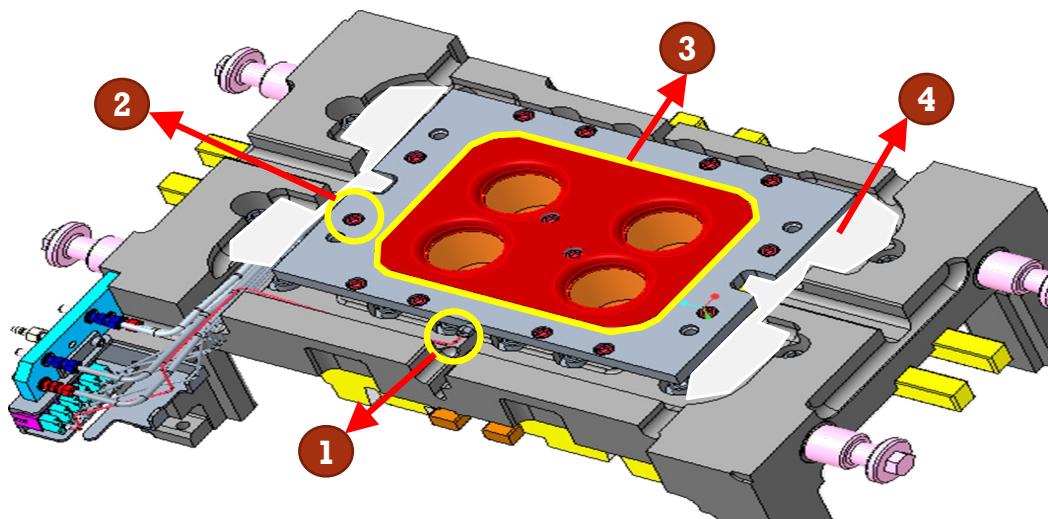




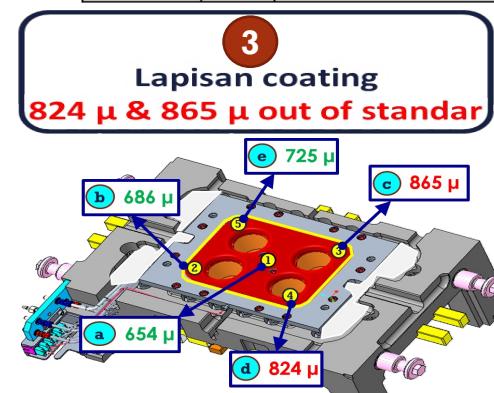
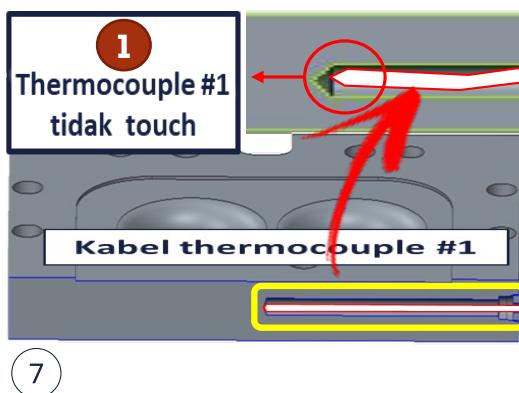
**Losses cost
Rp345.807.000
/ Month**

STEP 2. ANALISA KONDISI YANG ADA

- Analisa 4M+1E di area sprue cover

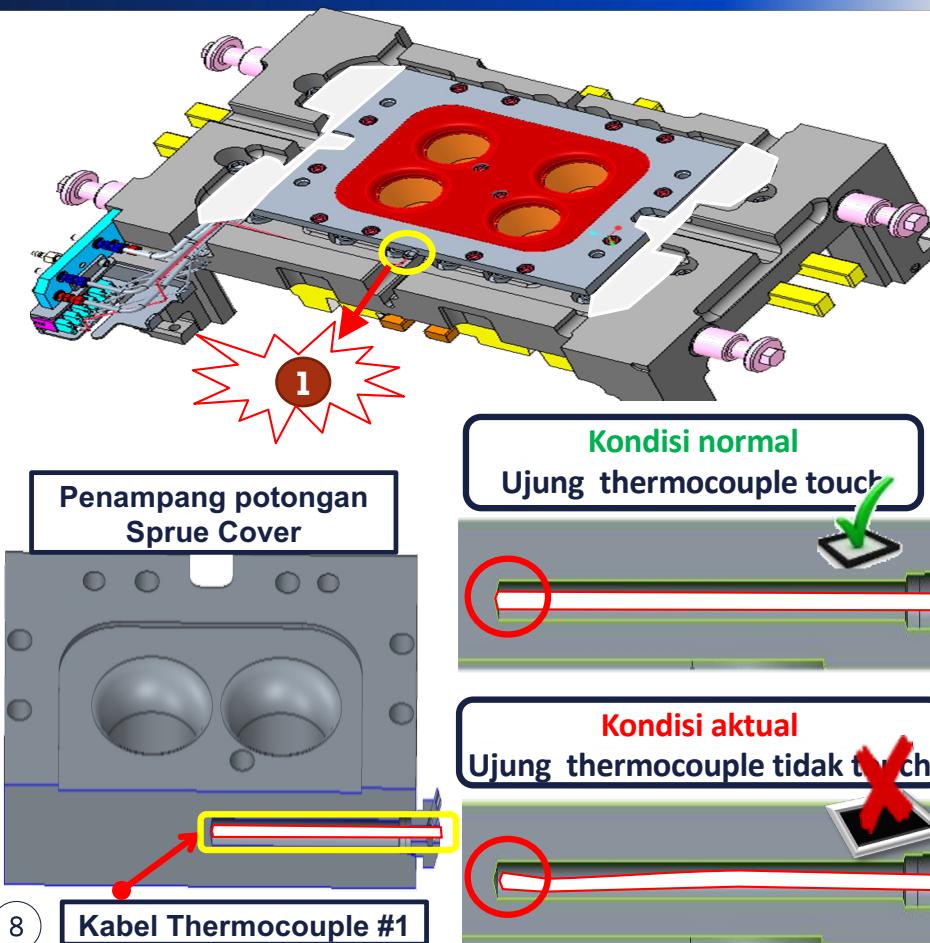


Faktor	No	Item Pengamatan	Standar	Current Condition
Sprue Cover	1	Thermocouple #1	Touch	Tidak touch
	2	Baut pengikat sprue cover kendor	Tidak ada yang kendor	Salah satu baut ada yang kendor
	3	Lapisan coating tidak merata	400 μ - 800 μ	750 μ - 850 μ
	4	Kondisi aluminium pada bagian lower	Tidak ada aluminium	Ada aluminium



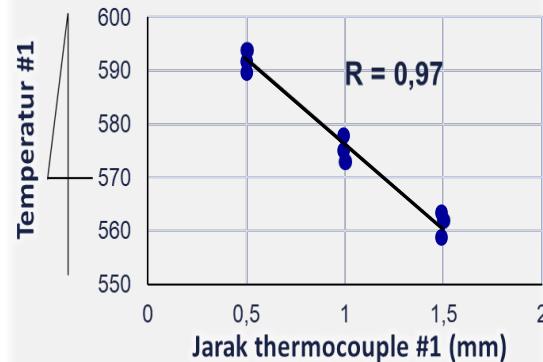
STEP 2. ANALISA KONDISI YANG ADA

1 Abnormal ujung thermocouple tidak touch sprue cover



Hipotesa

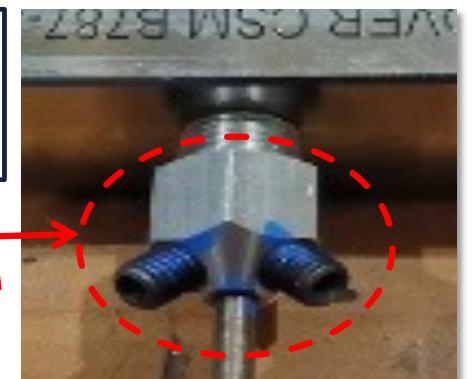
Jarak thermocouple #1 vs temperature #1



Kesimpulan :
Ada korelasi, Semakin jauh kabel thermocouple maka semakin kecil suhu pand yang dihasilkan (Berdampak)

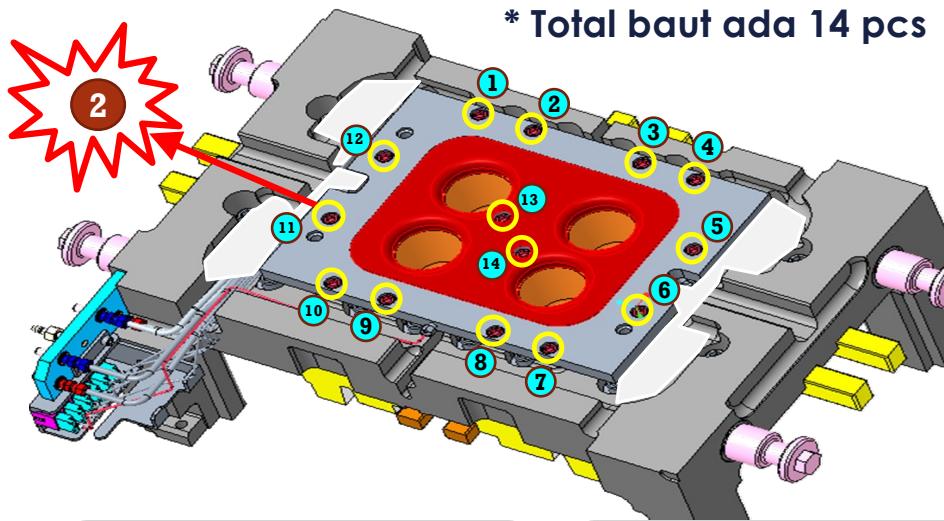
Temporary Action

Tambah baut pengikat dari 1 baut menjadi 2 baut, agar lebih kuat dalam mengikat kabel thermocouple



STEP 2. ANALISA KONDISI YANG ADA

2 Abnormal salah satu baut sprue cover kendor



Kekencangan baut
Kondisi normal
Tidak ada yang kendor



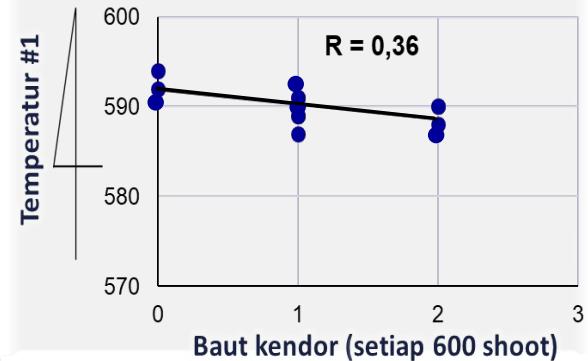
9

Kekencangan baut
Kondisi aktual
Ada yang kendor



Hipotesa

> Baut sprue cover kendor vs temperatur #1 (Sprue cover)



Kesimpulan :
Tidak ada korelasi,
Baut yang kendor tidak
mempengaruhi
temperatur #1
(Tidak Berdampak)



Action

Before baut baja
(Tidak tahan panas)



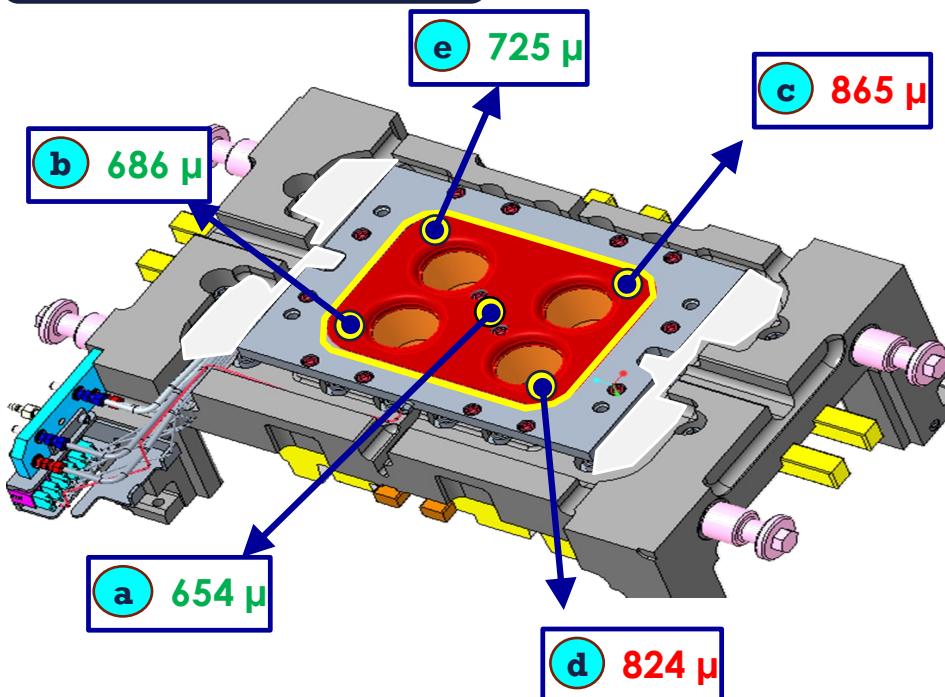
After baut stainless
(Tahan terhadap panas)



STEP 2. ANALISA KONDISI YANG ADA

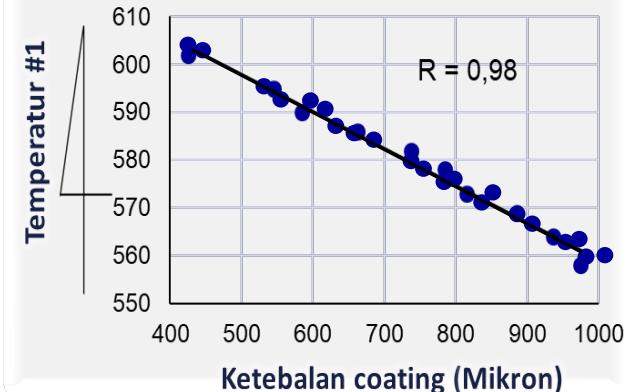
3 Abnormal Lapisan coating tidak merata

STD = 400 ~ 800 micron (μ)



Hipotesa

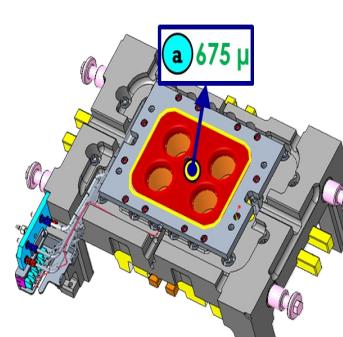
Lapisan coating tidak merata vs Temperatur #1



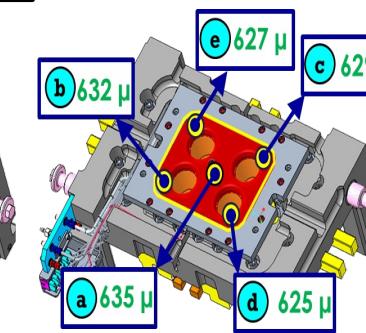
Kesimpulan :
Ada korelasi
Semakin tebal lapisan
coating, maka semakin
kecil suhu panas yang
dihasilkan
(Berdampak)

Temporary action

Before (1 Titik)

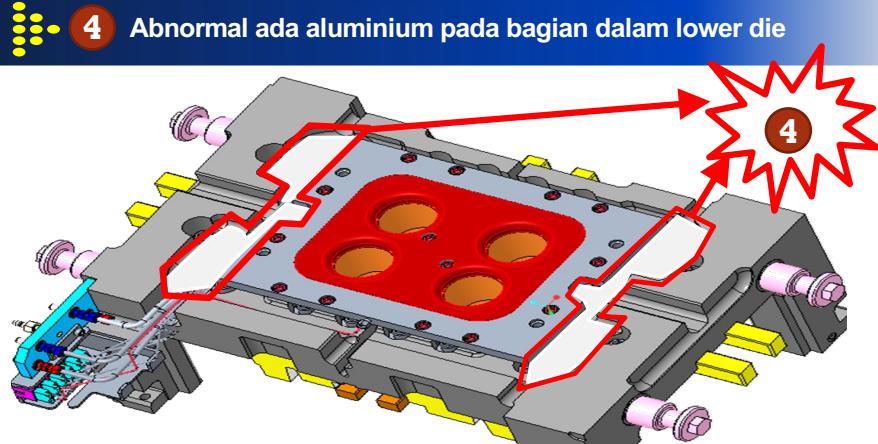


After (5 Titik)



1. Refresh proses
coating
2. Pemastian
kerataan coating
dengan menambah
point check
menjadi 5 titik

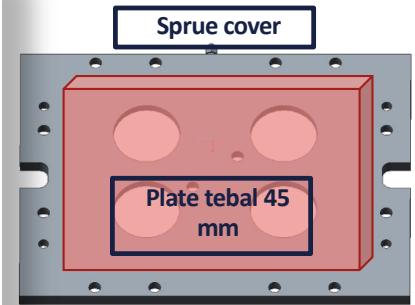
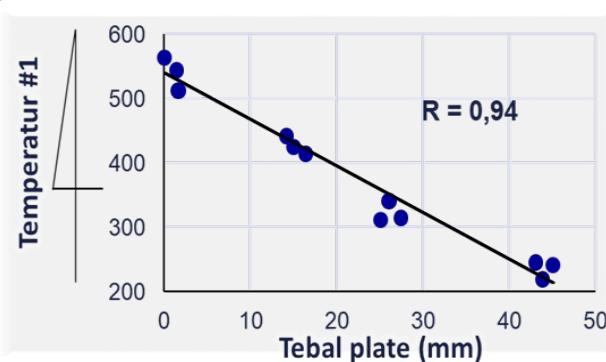
STEP 2. ANALISA KONDISI YANG ADA



11

Hipotesa

Tebal alumunium vs temperature #1



Kesimpulan :

Ada korelasi, Semakin tebal benda yang menghalangi, maka semakin kecil suhu panas yang dihasilkan (Berdampak)

Temporary Action

Repair area seki



Check kerataan dengan fuller gauge

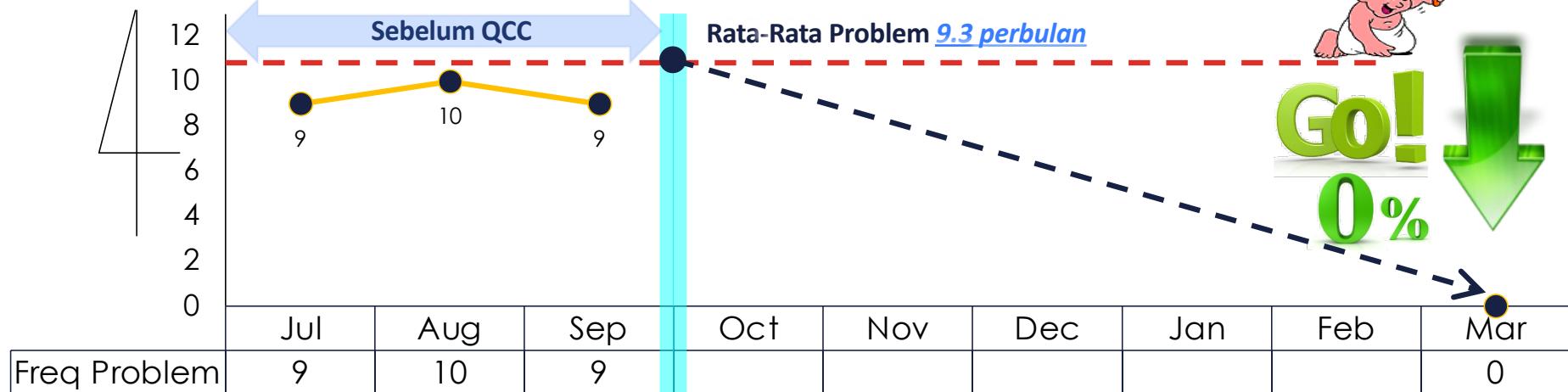


Check kelengkungan sprue cover per 5.000 shoot. Agar, bila terjadi kelengkungan bisa langsung terdeteksi



STEP 3. PENETAPAN TARGET

Target penurunan problem temperature low thermocouple # 1 pada outer die #5 di line LP



3.2 SMART Konsep

Specific

Temanya jelas :
Problem pada
thermocouple #1
di outer die #5

Measurable

Terukur dari
9.3 /bln
menjadi 0 /bln

Achievable

Pernah mencapai
problem 0 perminggu

Reasonable

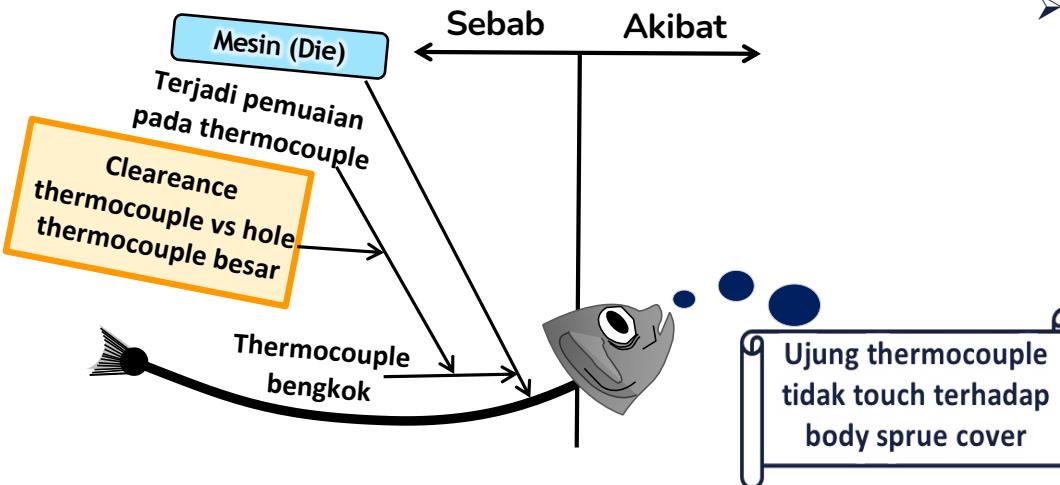
Semua penyebab
sudah di lakukan
verifikasi di step
anakonda

Time base

Problem akan di
tanggulangi
**Bulan Februari
2023**

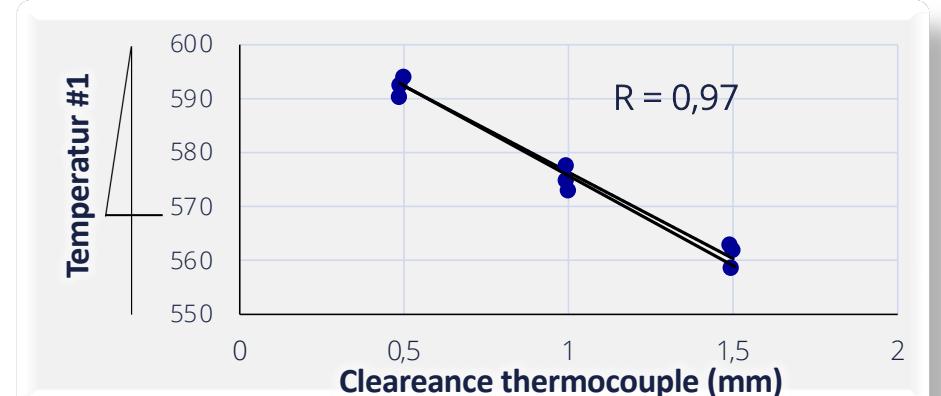
STEP 4. ANALISA SEBAB AKIBAT

1 Ujung thermocouple tidak touch terhadap body sprue cover



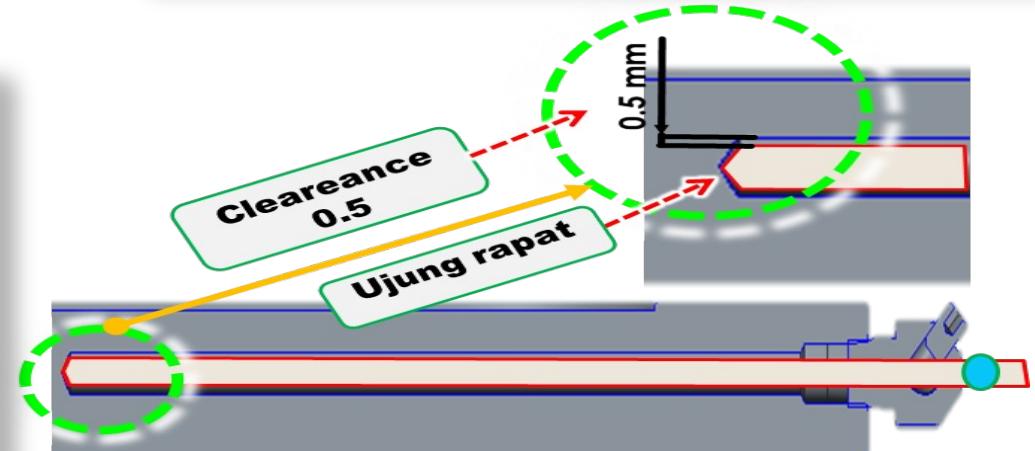
Hipotesa

➤ Clearence thermocouple #1 vs Temperatur #1



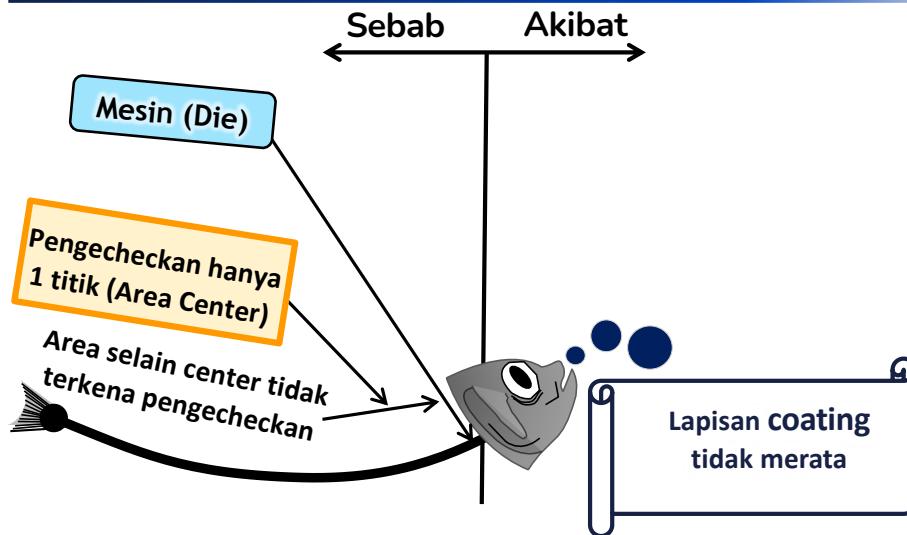
Kesimpulan :

Ada korelasi, semakin besar clearence thermocouple, maka ujung thermocouple tidak menyentuh sprue cover
(Berdampak)



STEP 4. ANALISA SEBAB AKIBAT

2 Lapisan coating tidak merata

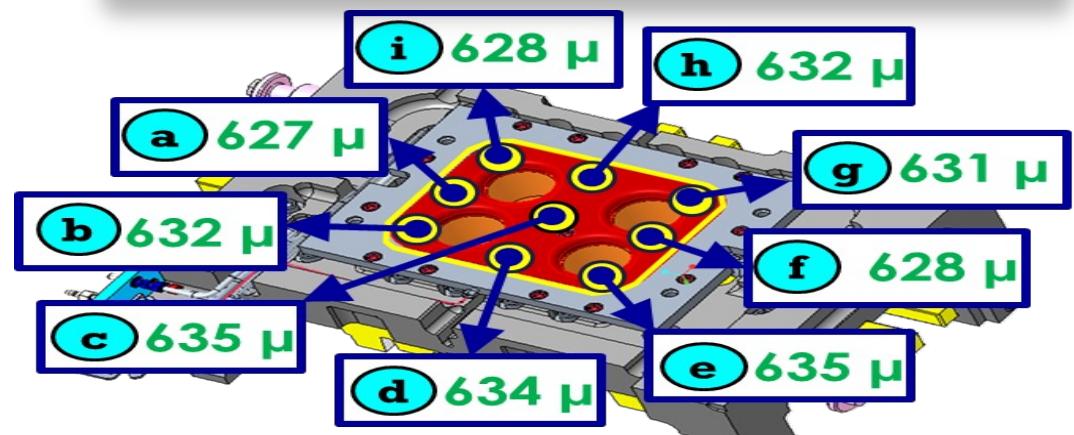
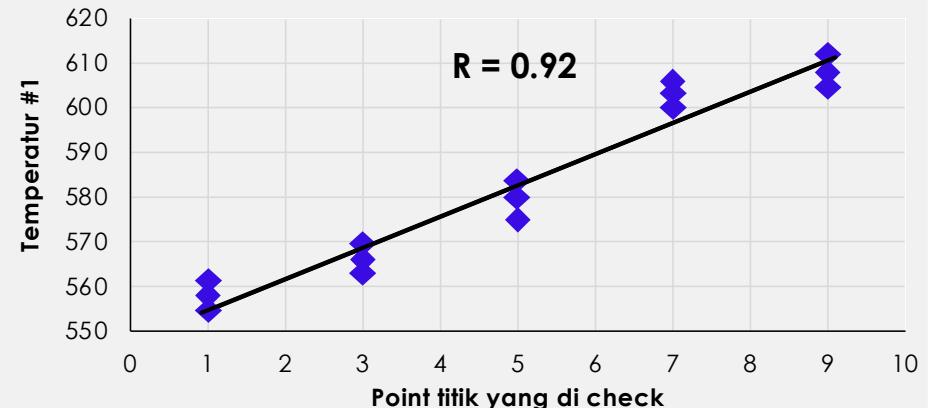


Kesimpulan :
Ada korelasi, semakin sedikit point pengecheckan maka coatingan tidak merata (Berdampak)



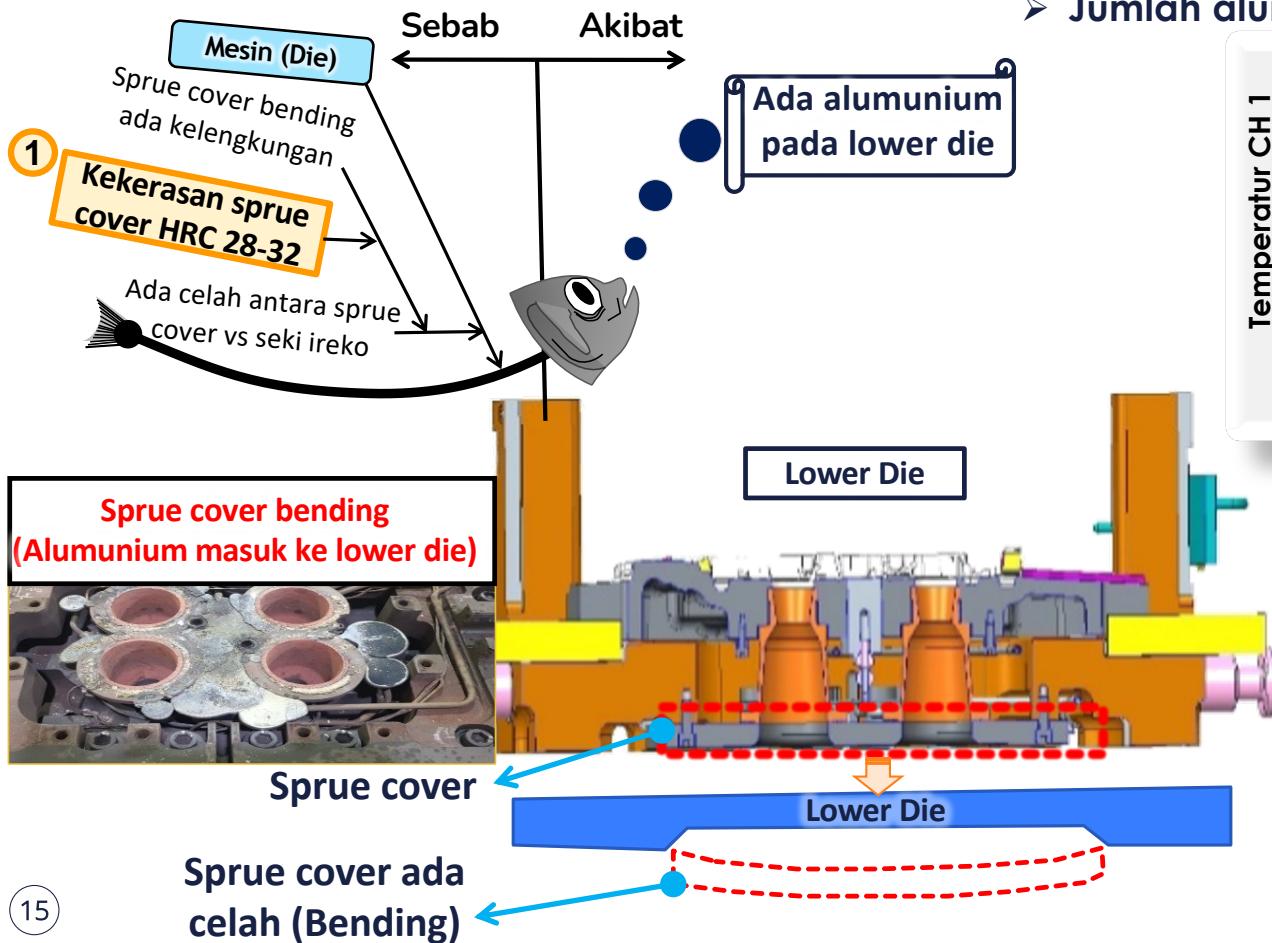
Hipotesa

➤ Pengecheckan 1 titik vs Themperatur #1



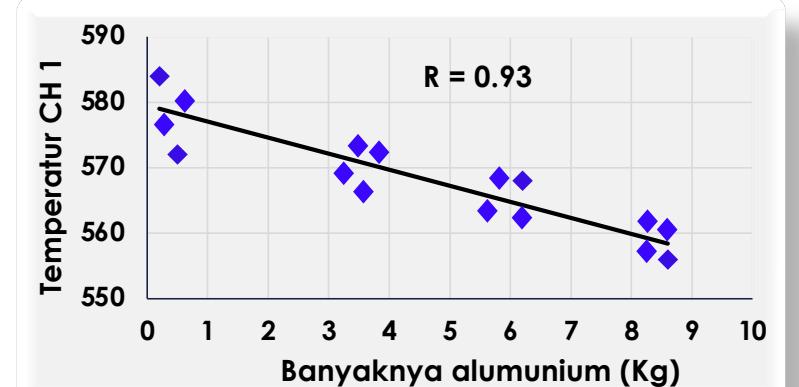
STEP 4. ANALISA SEBAB AKIBAT

3 Ada alumunium pada lower die



Hipotesa

➤ Jumlah alumunium vs temperature #1



Kesimpulan :
Ada korelasi. Semakin besar celah antara sprue cover vs seki ireko,maka alumunium mudah masuk pada lower die (Berdampak)

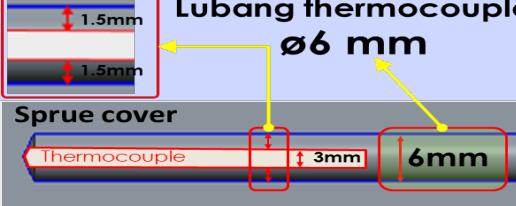
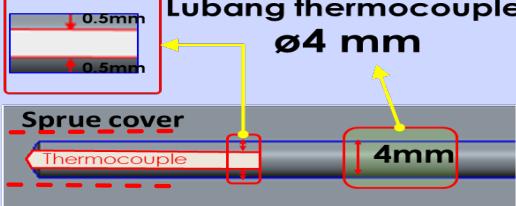
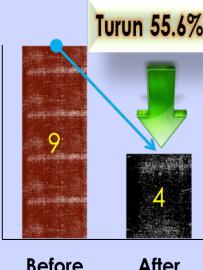
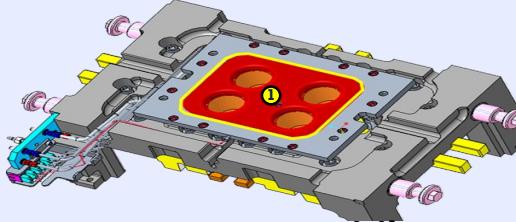
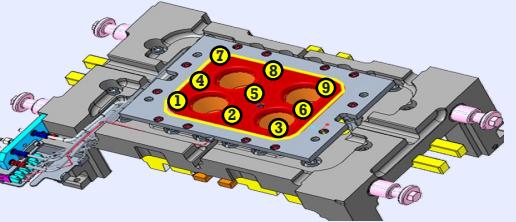
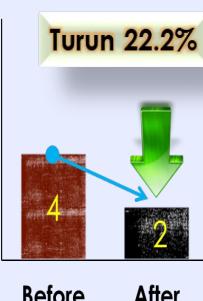
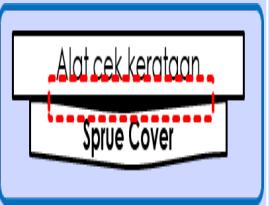
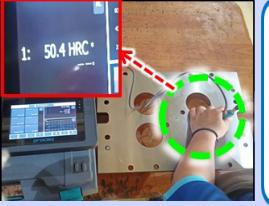
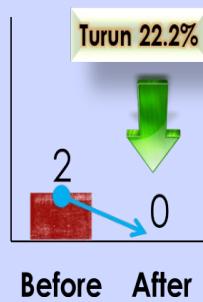


STEP 5.RENCANA PENANGGULANGAN

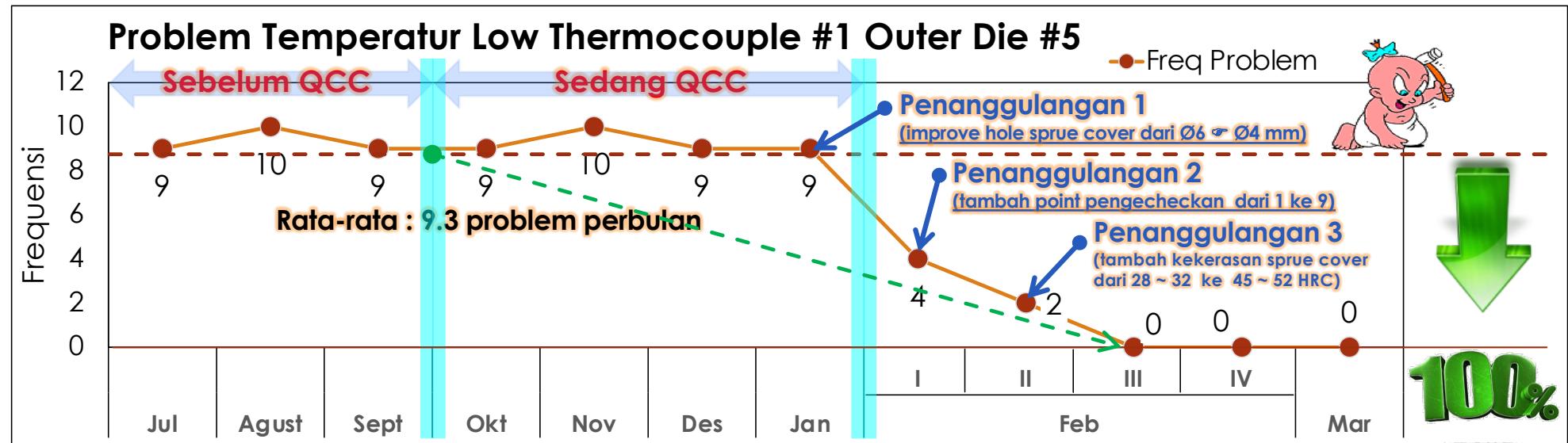


No	Root cause	Countermeasure	PIC	Waktu	Target				
1	Celah thermocouple vs hole thermocouple besar	Improve lubang thermocouple menjadi Ø 4 mm	Agung	31 Januari 2023	 <p>Turun 55.6%</p> <table border="1"> <tr> <td>Before</td> <td>After</td> </tr> <tr> <td>9</td> <td>4</td> </tr> </table>	Before	After	9	4
Before	After								
9	4								
Improve Thermocouple menjadi Ø 5 mm + Dudukannya mounting screw	Alam								
2	Pengecheckan hanya satu titik area center	Pengecheckan menjadi 5 titik	Vicky	06 februari 2023	 <p>Turun 22.2%</p> <table border="1"> <tr> <td>Before</td> <td>After</td> </tr> <tr> <td>4</td> <td>2</td> </tr> </table>	Before	After	4	2
Before	After								
4	2								
Pengecheckan menjadi 9 titik	Ridwan								
3	Kekerasan sprue cover HRC 28 ~ 32	Kekerasan sprue cover menjadi HRC 39 ~ 44	Akbar	13 februari 2023	 <p>Turun 22.2%</p> <table border="1"> <tr> <td>Before</td> <td>After</td> </tr> <tr> <td>2</td> <td>0</td> </tr> </table>	Before	After	2	0
Before	After								
2	0								
Kekerasan sprue cover menjadi HRC 45 ~ 52	Saleh								

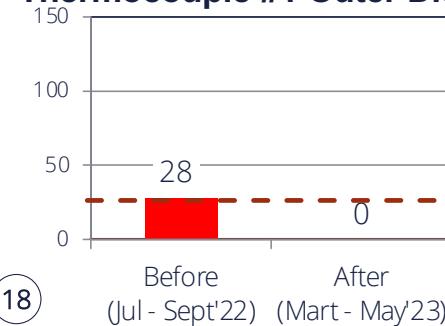
STEP 6.PENANGGULANGAN

No	Root cause	Sebelum	Sesudah	Waktu	Evaluasi				
1	Celah thermocouple VS hole thermocouple besar	 Lubang thermocouple Ø6 mm Sprue cover Thermocouple Thermocouple tidak touch sprue cover	 Lubang thermocouple Ø4 mm Sprue cover Thermocouple Thermocouple touch sprue cover	31 Januari 2023	 <p>Turun 55.6%</p> <table border="1"> <tr> <td>Before</td> <td>9</td> </tr> <tr> <td>After</td> <td>4</td> </tr> </table>	Before	9	After	4
Before	9								
After	4								
2	Pengecheckan hanya 1 titik area center	 Point check 1 titik (Coating tidak merata)	 Point check 9 titik (Coating merata)	06 Februari 2023	 <p>Turun 22.2%</p> <table border="1"> <tr> <td>Before</td> <td>4</td> </tr> <tr> <td>After</td> <td>2</td> </tr> </table>	Before	4	After	2
Before	4								
After	2								
3	Kekerasan sprue cover HRC 28 ~ 32	 Ilustrasi cek kerataan  Alat cek kerataan Sprue Cover	 1: 50.4 HRC  Fuller gauge Alat cek kerataan Sprue Cover	13 Februari 2023	 <p>Turun 22.2%</p> <table border="1"> <tr> <td>Before</td> <td>2</td> </tr> <tr> <td>After</td> <td>0</td> </tr> </table>	Before	2	After	0
Before	2								
After	0								

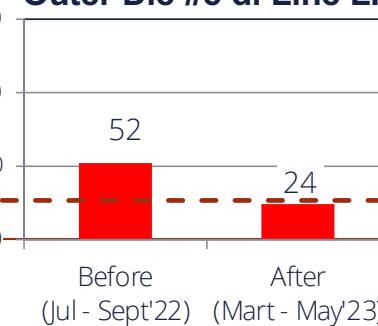
STEP 7. EVALUASI HASIL



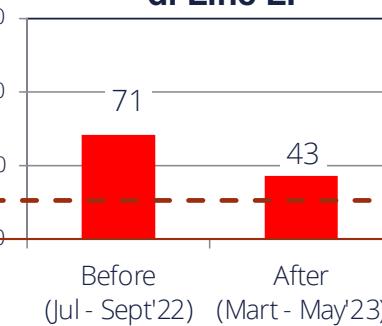
Grafik problem Temperatur Low Thermocouple #1 Outer Die #5



Grafik problem Outer Die #5 di Line LP



Grafik problem Outer Die di Line LP



STEP 7. EVALUASI HASIL

Evaluasi hasil terhadap S.Q.C.D.M.P.E

Before	Faktor	After	Judge.
Rank Ab Operator cleaning Alumunium (panas)		Rank Down Bc Tidak ada cleaning	
Dampak Problem Banyak part yang usak		Costumer Smile Pergantian part sesuai schedule PM	
Delivery Die Delay waiting action emergency repair		Delivery Die On time Supply Die on shcedule	
Operator lelah Sering ganti die karena problem		Team Work Produksi - Supporting yang solid	
OEE 80 % Sering ganti die karena problem		OEE 90 % Support Readyness Die	
Limbah Alumunium Bongkahan alumunium ex.problem		5R (sunstain) area kerja nyaman dan aman	

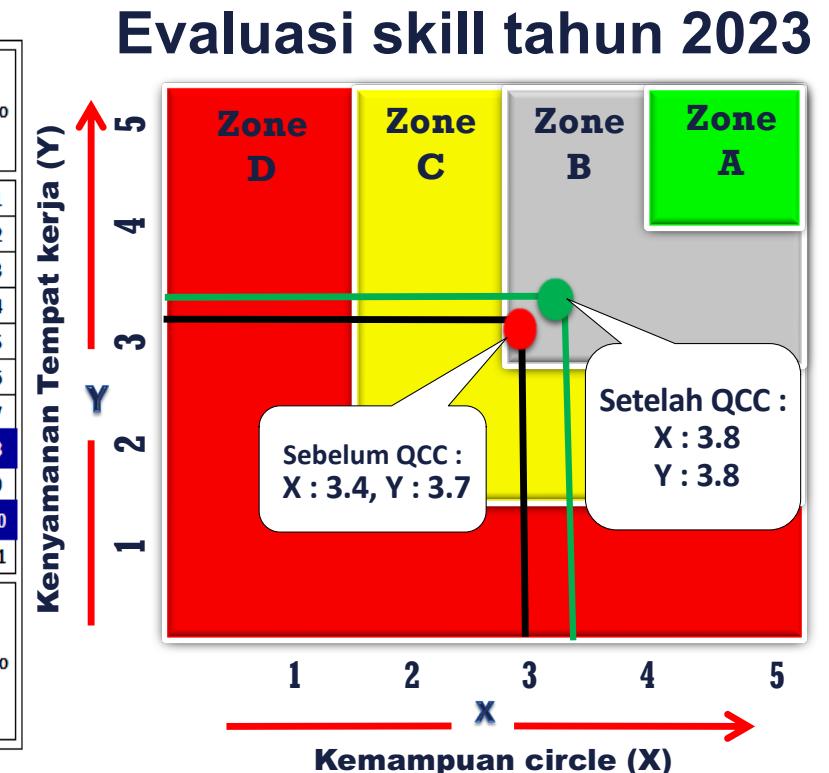


STEP 7. EVALUASI HASIL

❖ Evaluasi hasil re assesment setelah ber QCC

Detail skill member die maintenance white

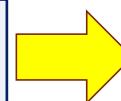
No	Score					X axis category				Nama Member	Y axis category					Score					No		
	5	4	3	2	1	8 Step Solving	Leadership	7 Tools	Tanoko Job	Kaizen	Team Work	Meeting	Communication	Self Inspiration	Safety Awareness	1	2	3	4	5			
1	4,6	4,0	5,0	4,0	5,0	5,0	RAMDANI	4,5	5,0	4,3	3,0	5,0	4,4	4,4	4,4	1							
2	4,6	4,0	5,0	4,0	5,0	5,0	TONI K.	4,5	5,0	4,3	3,0	5,0	4,4	4,4	4,4	2							
3	4,1	4,0	3,5	4,0	5,0	4,0	R. SALEH	3,5	4,0	3,5	3,0	5,0	3,8	3,8	3,8	3							
4	3,4	3,0	3,5	3,5	3,0	4,0	M. AKBAR	3,0	3,0	3,0	3,0	5,0	3,4	3,4	3,4	4							
5	3,4	3,0	3,5	3,5	3,0	4,0	M.SIGIT WF.	3,0	3,0	3,0	3,0	5,0	3,4	3,4	3,4	5							
6	3,7	3,5	3,5	4,0	3,5	4,0	VICKY IS.	3,5	4,0	3,5	3,0	5,0	3,8	3,8	3,8	6							
7	3,6	3,5	3,5	4,0	3,0	4,0	AGUNG I.	3,5	4,0	3,5	3,0	5,0	3,8	3,8	3,8	7							
8	3,5	3,5	3,5	3,5	3,0	4,0	M. RIDWAN	3,0	3,7	3,7	3,0	5,0	3,7	3,7	3,7	8							
9	3,5	3,5	3,5	3,5	3,0	4,0	ALAM IBK.	3,5	4,0	3,7	3,0	5,0	3,8	3,8	3,8	9							
10	3,5	3,5	3,5	3,5	3,0	4,0	*SUNARDI	3,0	3,0	3,5	3,0	5,0	3,5	3,5	3,5	10							
11	3,8	3,5	4,0	4,0	3,5	4,0	RAWAN	3,5	4,0	4,0	3,0	5,0	3,9	3,9	3,9	11							
No	5	4	3	2	1	3,5	3,8	3,8	3,6	4,2	Nama Member	3,5	3,9	3,6	3,0	5,0	5	4	3	2	1	No	
	Score					8 Step Solving	Leadership	7 Tools	Tanoko Job	Kaizen		Team Work	Meeting	Communication	Self Inspiration	Safety Awareness	Score						
	X axis															Y axis							



STEP 8. STANDARISASI

No	ITEM	STANDARISASI	KEY POINT	IMPLEMENTASI STANDARISASI	PIC
1	S P R U E C O V E R A). HOLE THERMOCOUPLE	Improve sprue cover hole thermocouple dari ø6 mm menjadi ø4 mm (clearance 0.5mm)	Pastikan cek diameter hole sprue cover sebelum di pasang	UPDATE DRAWING & CHECKSHEET PM	AGUNG I M.AKBAR TONI.K
2	B). HARDNESS KEKERASAN	Hardness kekerasan sprue cover dari HRC 28-32 menjadi HRC 28-35	Pastikan hardness sesuai standar, dan mulis pada checksheet	UPDATE DRAWING & CHECKSHEET PM	RAMDANI HARYANTO M.SIGIT
3	PENGECHECKAN COAT	Pengecheckan di banyak titik menjadi 9titik	Masukan item pada checksheet PM agar lebih tercontrol untuk titik pengecheckanya	UPDATE SOP & CHECKSHEET PM	M. RIDWAN SUNARDI VICKY

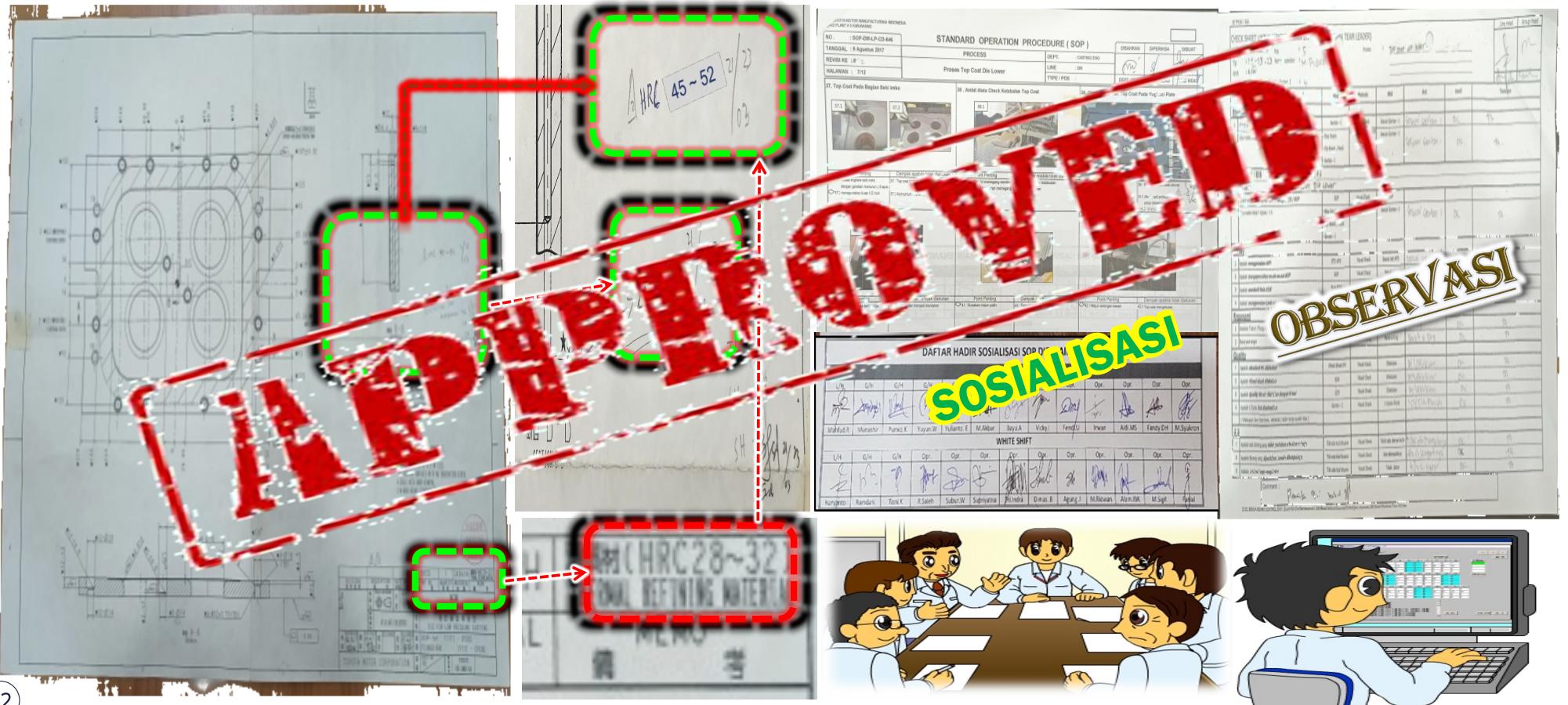
**"ITEM-ITEM STANDARISASI SUDAH
DI APPROVED DARI LEVEL GL ~ DEPT HEAD"**



Dept. Head	Approved	Checked	Prepared
Endi S.	Mahfud R.	Haryanto	Murashir / Ramdani

STEP 8. STANDARISASI

Revisi S.O.P, Drawing,Sosialisasi all member dan Observasi



Aspek	Review	Activity
Negatif	1. Tidak semua member aktif ber QCC 2. Pemahaman QCC member baru kurang	1. Memimpin aktifitas QCC secara bergantian 2. Develop member baru sampai paham
Positif	1. Aktifitas step by step QCC tepat waktu 2. Member selalu ada ide baru saat ber QCC	Pertahankan...terus lakukan continuous improvement temukan terobosan baru

Member Voice		Parameter				Total	Rank
		Efficiency	Frequency	Skill	Time		
M.Akbar	Frekuensi kajiri pada water jacket die A1 tinggi	3	3	2	3	11	1
Rawan	Jejak ejector pin pada work sering mendem	2	2	1	2	7	2
M.Sigit	Waktu cutting wor HC terlalu lama	2	2	1	1	6	3
Saleh	Problem bocor pada cavity C4 tinggi	2	1	1	1	5	4

(23)



TERIMAKASIH...



PENDUKUNG AKTIFITAS QCC KAMI

8:15 AM | 729KB/d 8:15 AM | 729KB/d Boards Trello Boards Starred boards QCC White Lion Semester II (2022 ~ 2023) Toyota Work Space QCC White Lion Semester I_2023 QCC White Lion Semester II (2022 ~ 2023)

TOYOTA INDONESIA PT Toyota Motor Manufacturing Indonesia AR-DM Augmented Reality Die Maintenance (Low Pressure Casting) Engineering Service EPKD Plant 3

5:44 PM mfg-connectivity mfg-connectivity.mfg-connectivity.toyota.co.id/web#/sc/dashboard TOYOTA Production Daily Dashboard Stratification Report Master Report Summary Manufacturing Connectivity Platform Toni Kantania Home 11, Fri 08 2023 - 17:44:02 EPKD Connectivity Die Casting KPI Production Henkaten

Refresh hati & pikiran



SAMPAI JUMPA... SEE YOU NEXT TIME