

QUALITY REPORT MAR '19

CONTENT



1. *Performance YPMI (Related YIMM)*

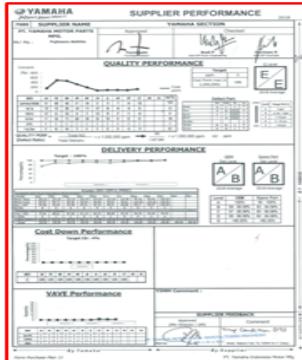
2. *Summary Claim YPMI (Jan 2019)*

3. *Pilar & Action Plan Quality Up 2019*

4. *Summary NG Internal 2019*

5. *Cost of Poor Quality*

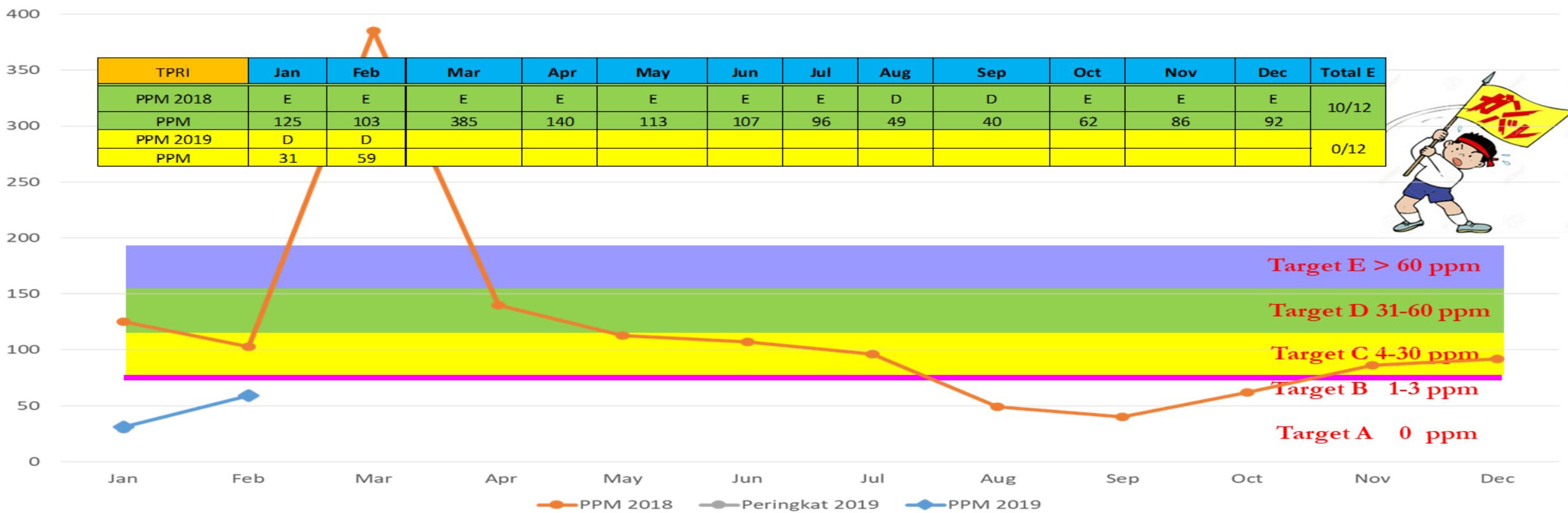
YPMI Performance (YIMM Related)



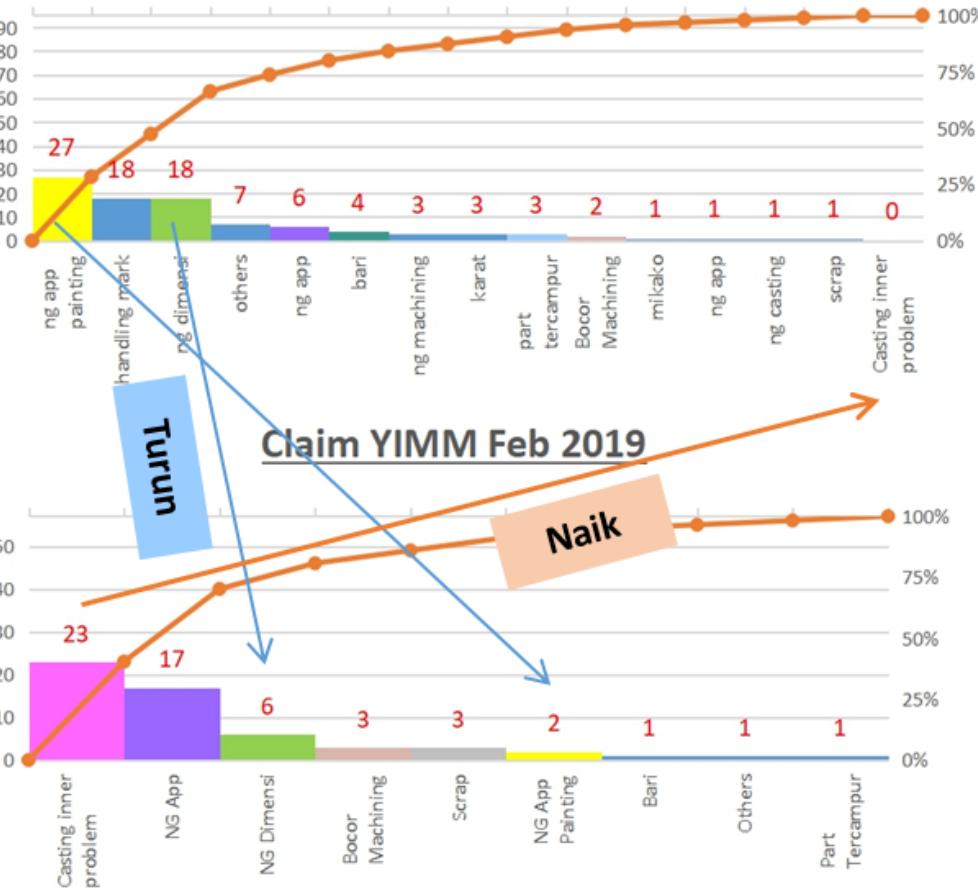
Tahun	PPM (Jan-Feb)		Peringkat (Jan-Feb)	
	Target	Aktual	Target	Aktual
2018	100	122	> 20	17
2019	80	44	> 30	28



PERFORMANCE YPMI Vs Target YIMM (PPM)



Claim YIMM Feb 2018



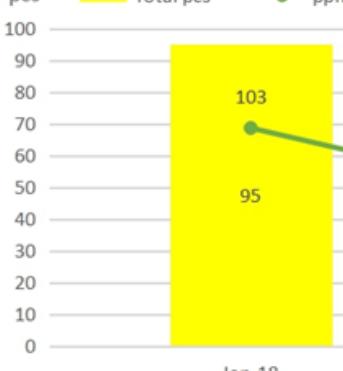
Claim YIMM Feb 2019

Naik

Hyojun
Shoubi

pcs
Total pcs ppm

Data Claim Feb 2018 vs 2019



MSA

Hasil Audit Hyoujun Soubi Painting



Peningkatan aktivitas
hyojun shoubi

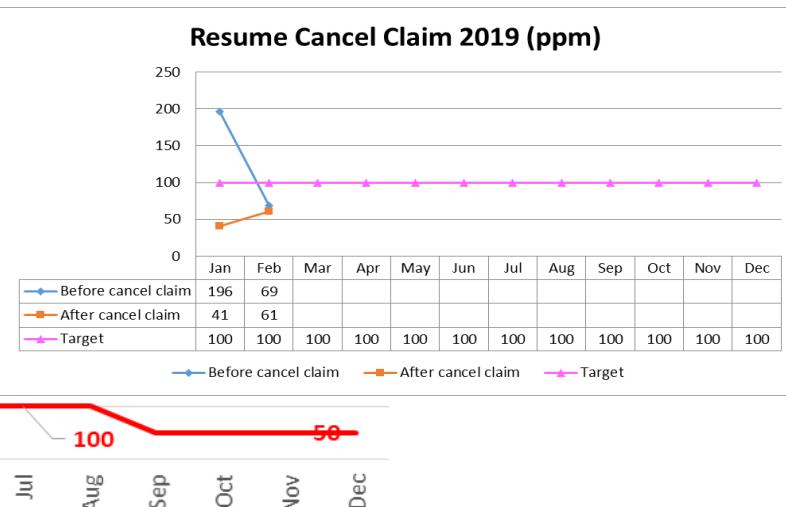
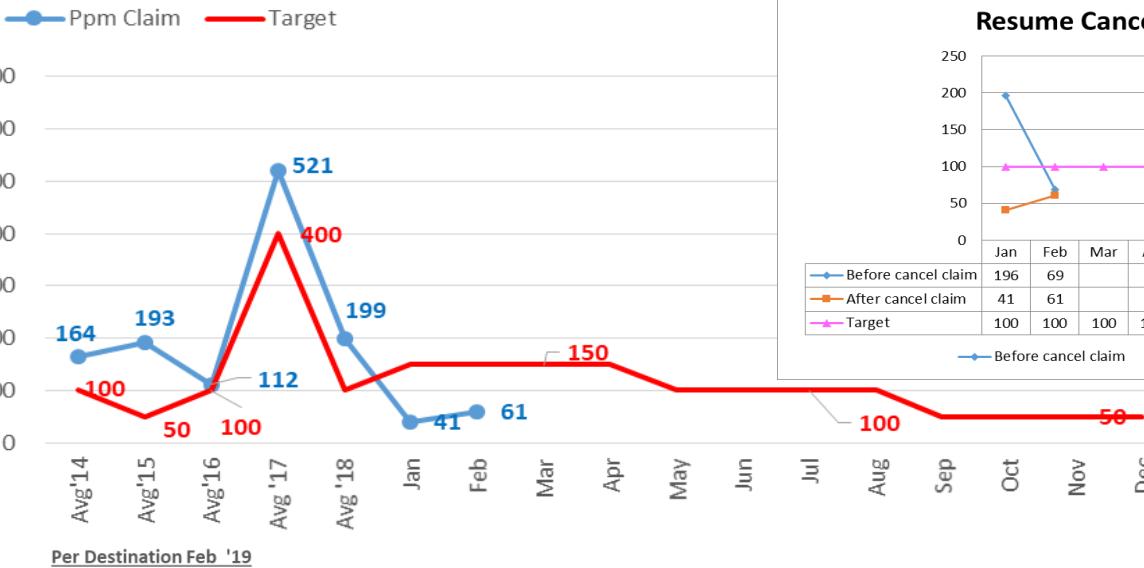
Lisensi
Inspector



sudah mendapatkan
lisensi untuk inspector
final painting

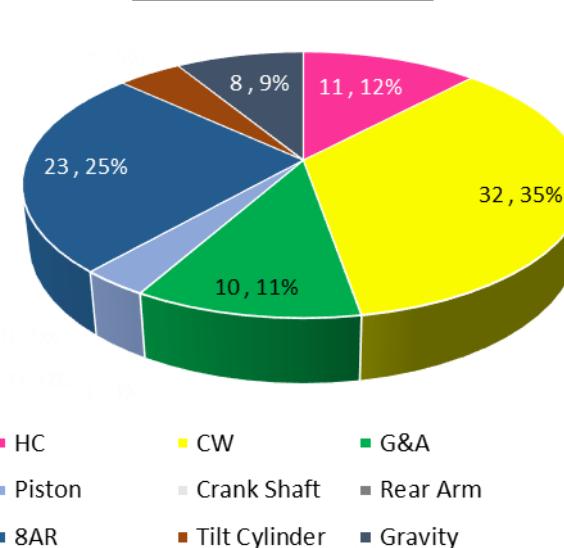
February Claim Summary

Monitoring ppm YPMI 2019

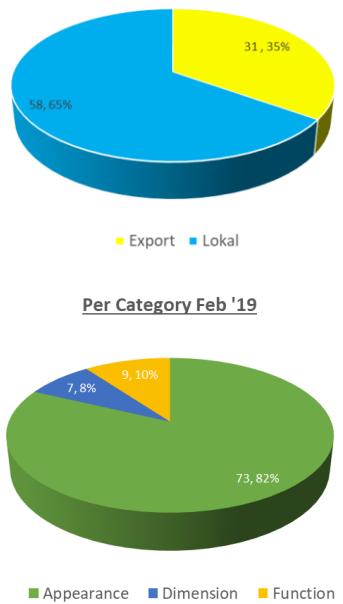


Tahun	Target (ppm)	Aktual (ppm)
2014	100	164
2015	50	193
2016	100	112
2017	400	521
2018	100	200
Feb 2019	100	61

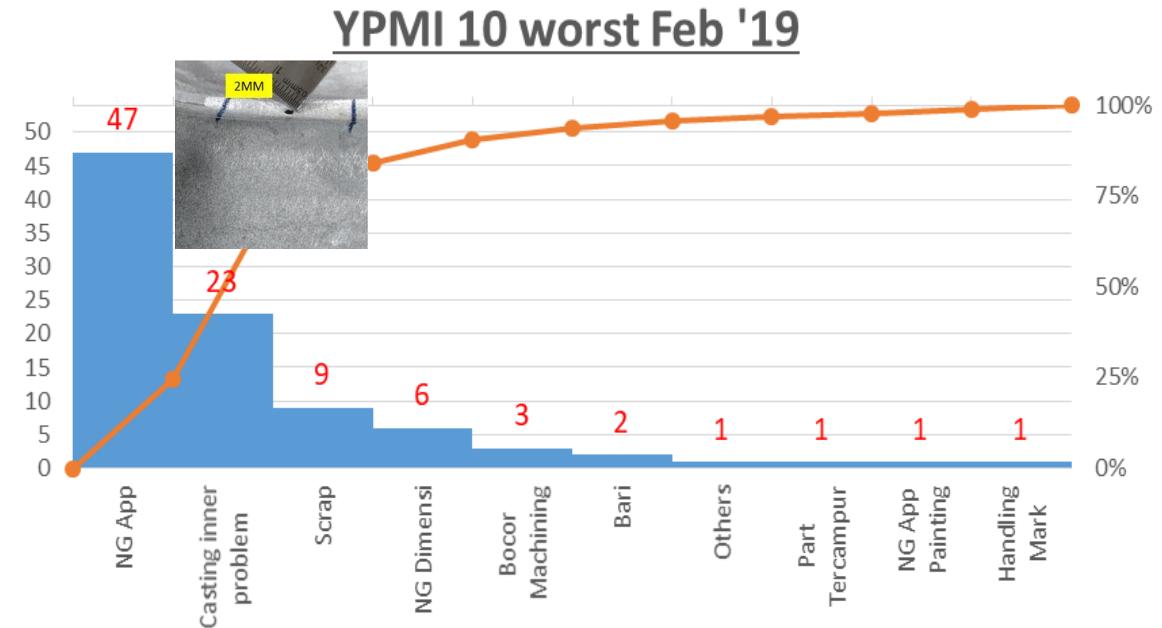
Per Product Feb '19

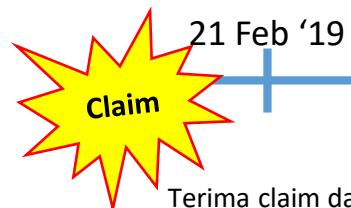


Per Category Feb '19



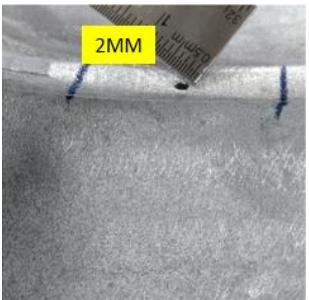
- HC
- Piston
- 8AR
- CW
- Crank Shaft
- Tilt Cylinder
- Gravity
- G&A
- Rear Arm
- Scrap
- NG App
- Casting inner problem
- NG Dimensi
- Bocor
- Machining
- Bari
- Others
- Part Tercampur
- NG App Painting
- Handling Mark





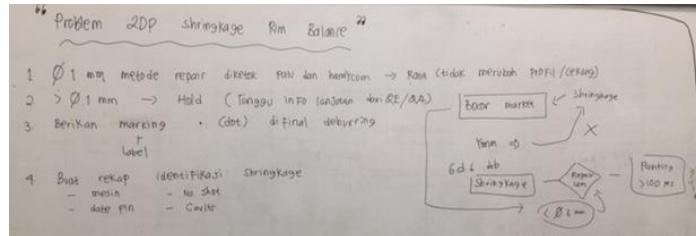
21 Feb '19

Terima claim dari
YIMM-HO 22 pcs,
blow hole area rim
balance



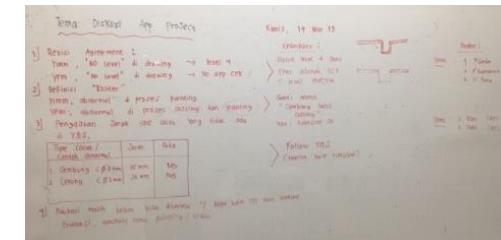
26 Feb '19

1ST lot guarantee



1 Mar '19

Verifikasi dengan
CT Scan, leak tester
dan strength test.



14 Mar '19

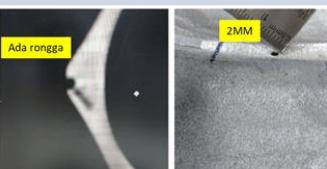
Diskusi dengan YIMM dan YIMM request
untuk cek apakah kondisi blow hole
terkena painting atau tidak.

19 Mar '19

Next Act : Pengajuan limit sample ke YIMM
base on YQS untuk tipe cacat "tidak halus,
cekung, warna sama" (D/D : End Mar '19)

CT Scan

Ø 2 mm ada yang berrongga
& tidak

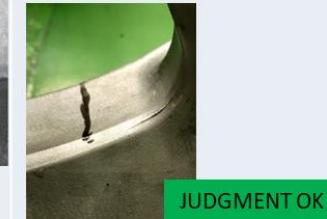


Leak Tester

Kondisi berrongga, before S/T



Kondisi berrongga, After S/T



Strength Test (S/T)



JUDGMENT OK

JUDGMENT OK

JUDGMENT OK

Painting Gold, Bagian blow hole
terdapat miss spray sedangkan
raw part tidak kelihatan ada miss
spray



Monitoring project 4LC Head Cylinder

No	Problem	Trial					OTOP			MPT	1st Delv
		T1	T2	T3	T4	T5	N-100	Pre N-1.000	N-1.000		
1	Flatness Datum	X	O	O	O	O	O	O	O	X	X
2	Touching sensor Phenomenon	X	O	O	O	O	O	O	O	O	O
3	Leakage V	X	O	O	O	O	O	O	O	X	X
4	Leakage Base (Shrinkage)	X	X	X	O	O	O	O	O	X	O
5	Crack (Shrinkage)	O	O	X	X	X	X	X	X	X	X

No need improvement, NMI & YPMI agree that problem is not the casting part, but the clamping jig

Masih ada kondisi part abnormal yang terkirim ke NMI.

Next : QA akan lakukan audit proses 4LC (Pekan ke-2 Apr '19)

from Wj
... Chamber, by shrinkage in the Upper area

Improvement :
 1. Increase Molten Temp: 720°C -> 740°C
 2. Plug Water cooling #2 was set OFF
 3. Use Air Insulator Pin (Upper Plug)
 4. Use Air cooling Plug & Be Cu (OG Hole)

Improvement :
 1. Increase Molten Temp: 720°C -> 740°C
 2. Enlarge Riser (Lifter & Shell Core)
 3. Enlarge Insert Plug pin (reduce thickness)
 4. Installation fix shell setting 100 s & make shuku-shuku seisan stable & increase lower mould temp

Crack (shrinkage) on the CAM area

Improvement :
 1. Reduce chokotei (eliminate repair coating activity)
 2. Installation fix shell setting 100 s & make shuku-shuku seisan stable & increase lower mould temp

CLAIM LOKAL & EKSPOR

	Feb 2019 (ppm)	Aktual 2018 (ppm)	YTD 2019 (ppm)	Target 2019	YTD Vs Target
YPMI	61	529	51	100	●
Head Cylinder	53	607	43	75	●
Casting Wheel	100	552	88	150	●
Gear & Axle	15	113	11	10	✗
Piston	10	22	8	5	✗
Crank Shaft	0	94	50	0	✗
Rear Arm	0	729	0	200	●
8AR	23.469	26.119	18.331	6.000	✗
Tilt Cylinder	600	3.316	792	700	✗
Gravity	1.667	31.000	833	5.000	●

CLAIM LOKAL

	Feb 2019 (ppm)	YTD (ppm)	Target 2019	YTD Vs Target
YPMI	41	44	80	●
Head Cylinder	57	46	75	●
Casting Wheel	102	89	150	●
Gear & Axle	17	12	10	✗
Piston	13	10	5	✗
Crank Shaft	0	72	0	✗
Rear Arm	0	0	200	●
8AR				
Tilt Cylinder				
Gravity				

Claim EKSPOR

	Feb 2019 (ppm)	YTD (ppm)	Target 2019	YTD Vs Target
YPMI	244	184	100	✗
Head Cylinder	31	16	75	●
Casting Wheel	0	0	150	●
Gear & Axle	0	0	10	●
Piston	0	0	5	●
Crank Shaft	0	0	0	●
Rear Arm	0	0	200	●
8AR	23.469	18.331	6.000	✗
Tilt Cylinder	600	792	700	✗
Gravity	1.667	833	5.000	●

STRATEGI QUALITY UP

1. Menurunkan NG Internal
2. Meningkatkan Q-Gate
3. Meningkatkan Negosiasi *Skill & Agreement Quality* dengan *customer*

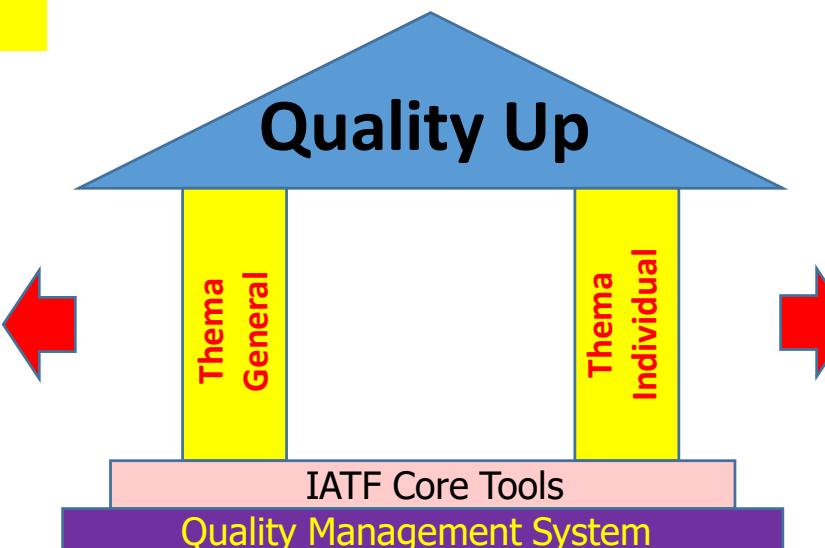


5 Tema

6 Tema

PILAR QUALITY UP

1. License System
2. YPQ
3. Hyoujun Soubi
4. Zero Setting Activity
5. Kualitas Air & Angin
6. Maintenance Delivery Equipment (Trolley, Box, Pallet etc)
7. Yokotenkai Big E/G
8. Industrial 4.0
 - Automatisasi metode cek dengan alat ukur
9. Apperance Project



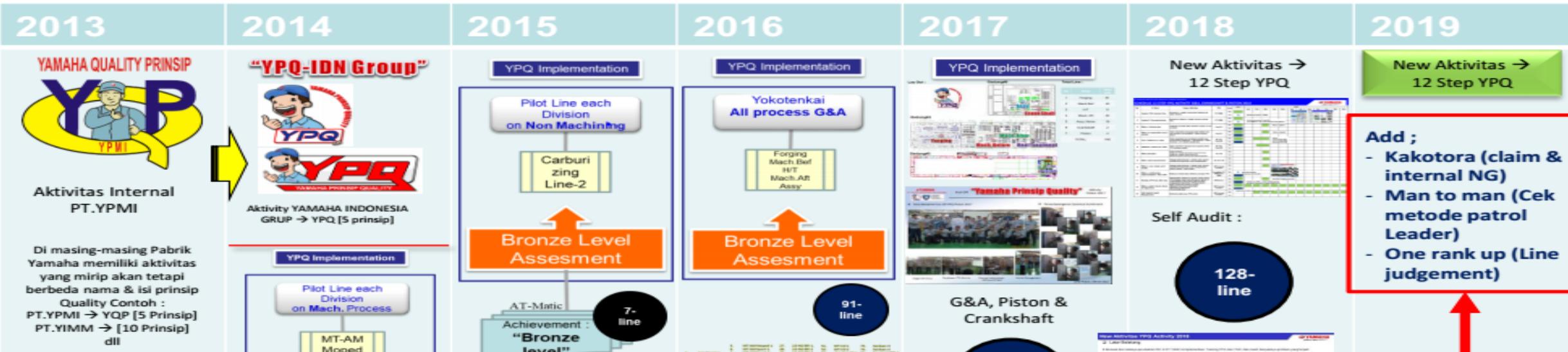
1. Zero Challenge Act
 2. QCC
- Dengan tema-tema, sbb :
- * Problem Scrap,
 - * Handling Mark,
 - * NG Internal,
 - * Part Tercampur

Schedule Lisensi Operator

Progress YPQ Activity YPMI-G&A, PISTON & CRANKSHAFT

Strong Genba → “Improve Habit Quality Genba”

Tujuan : Proses produksi mengikuti standard process & mengikuti procedure dan rule

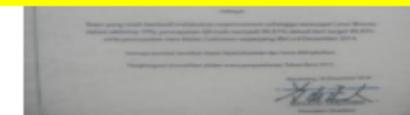


FOKUS AKTIVITAS YPQ 2019

1. One rank up [Jugjement line]
2. Man to man [Cek metode patrol Leader]
3. Kakotora [Claim & Internal NG]



**NEW
AKTIVITAS**



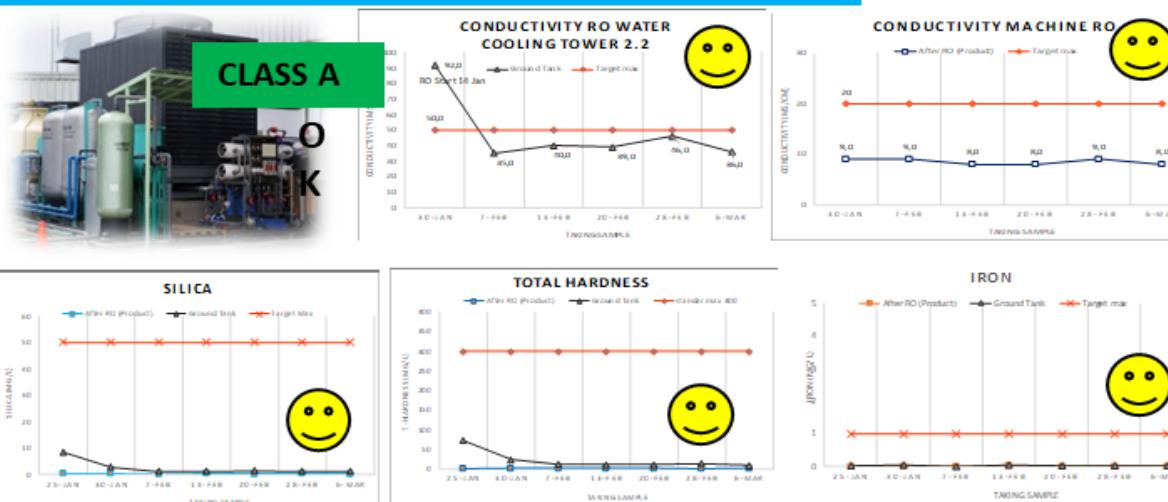
YPQ Activity

No	Activity Item	PIC	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	Update 12 Step YPQ Aktivity [Make a Activity plan; Make an organization and a system; Put a Kakotora in order; Kakotora connect to YPQ; Make principles; Make small manual books; Make a case study each Genba; Make a activity plan implementation "Kick Off"; Reading YPQ day after day; Make a patrol check sheet of Supervisor]	Operator [tetap]	Plan													
			Actual						* Update step 1 ~ step-4							
2	Self Evaluation Level YPQ [One Rank Up → Menggunakan Check Cheet Audit YMC]	ALL Member [Foreman & GF Pic Line]	Plan													
			Actual													
3	Man To Man Aktivity [Review Check Shett, Check Aktual Pelaksanaan Patrol Leader]	ALL Member [Foreman & GF Pic Line]	Plan													
			Actual													
4	Verifikasi & Collaboration Cek Hasil Self Evaluation Level YPQ Line Yang Sudah mencapai Level 3	QA, QC, Prod & Manajement	Plan													
			Actual													
5	Report Hasil Self evaluation Level YPQ, & Man to man Cek di Weekly Meeting C-10, C-5 & C-0	ALL Member [Foreman & GF Pic Line]	Plan													
			Actual													

Ket : : Plan : Aktual

Progress Peningkatan Qualitas Air & Angin

Grafik Monitoring Water Quality RO Cooling Tower GD2



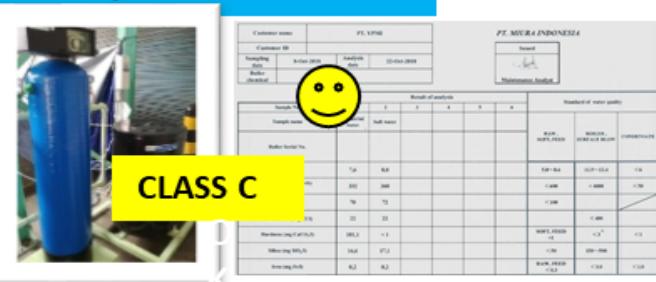
Grafik Monitoring Water Quality CLC DC10



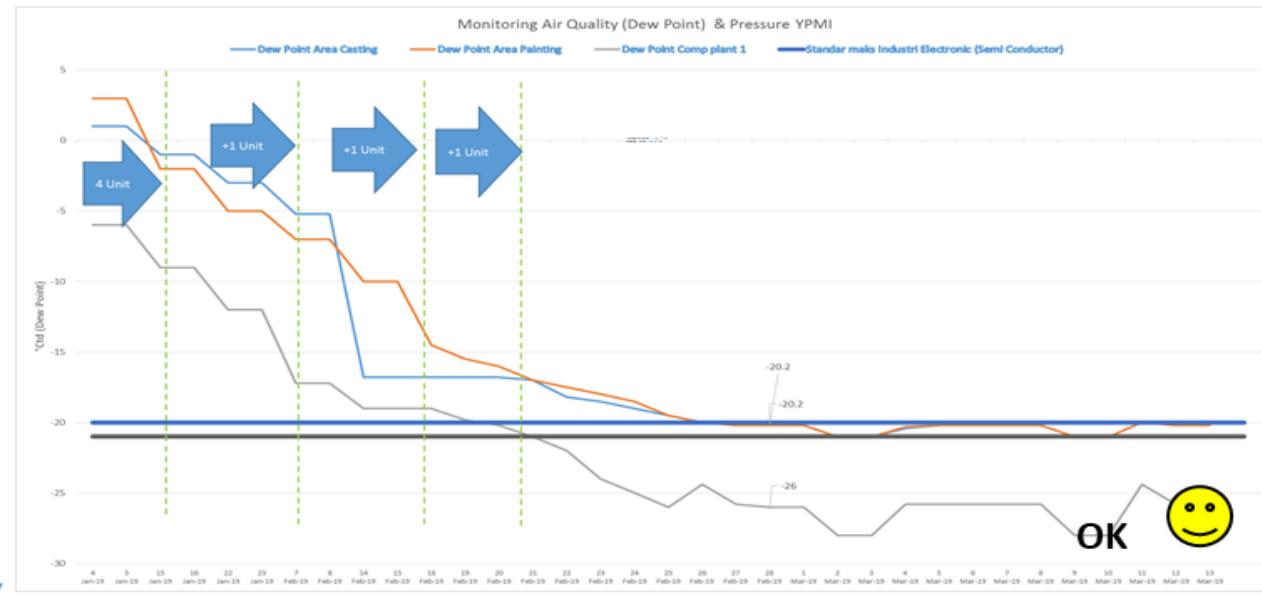
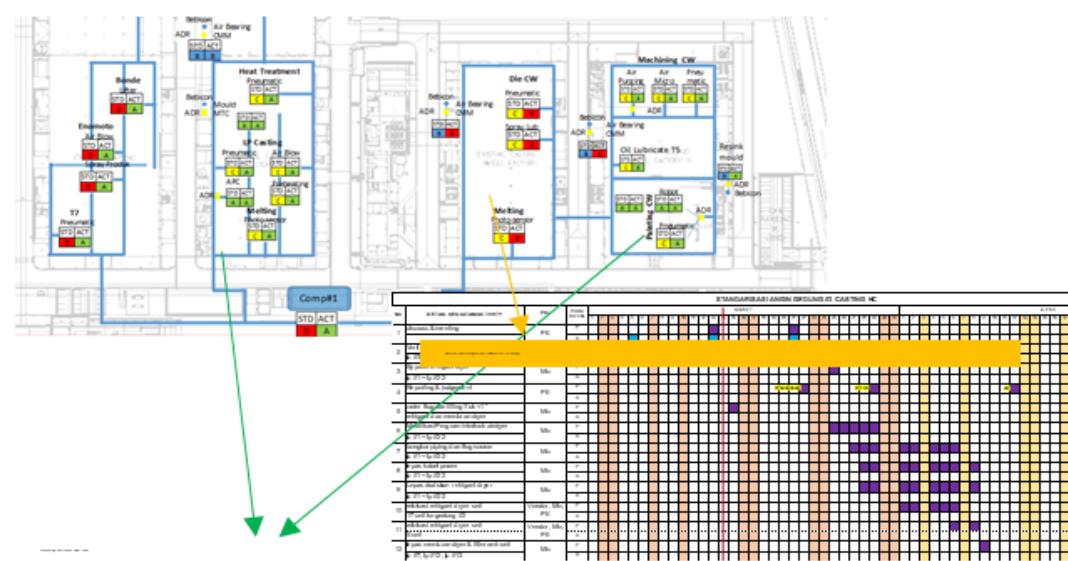
Quality RO CT Forging



Quality Softener Crankshaft



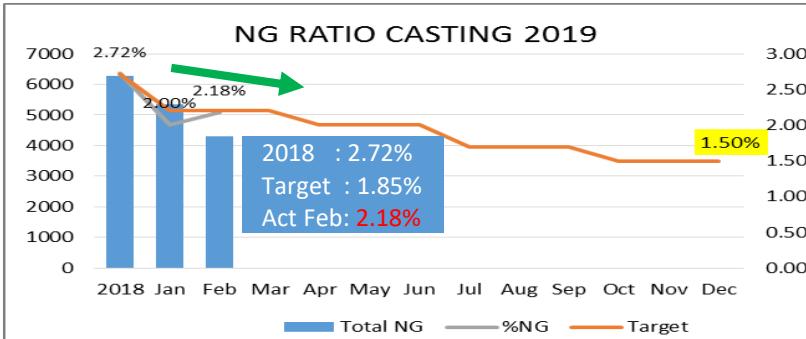
AIR QUALITY



Head Cylinder

	PRODUK	TARGET 2019	AVERAGE 2019		Jan-19	Feb-19	
NG INTERNAL							
HEAD CYLINDER	NG Head Cylinder	3.50%	1.70%	O	1.55%	1.84%	O
	NG Casting	1.85%	2.09%	X	2.00%	2.18%	X
	NG Machining	0.30%	0.41%	X	0.41%	0.41%	X
	NG Casting di Machining	1.00%	1.39%	X	1.32%	1.47%	X
NG 8AR	NG 8AR	12.85%	15.92%	X	15.05%	16.80%	X
NG Tilt Cylinder Cast	NG Tilt Cylinder Cast	8.50%	13.47%	X	14.35%	12.58%	X
	NG Tilt Cylinder Mach	2.00%	0.71%	O	0.91%	0.52%	O
	NG Tilt Cylinder Cast di Mach	7.50%	7.03%	O	7.01%	7.04%	O

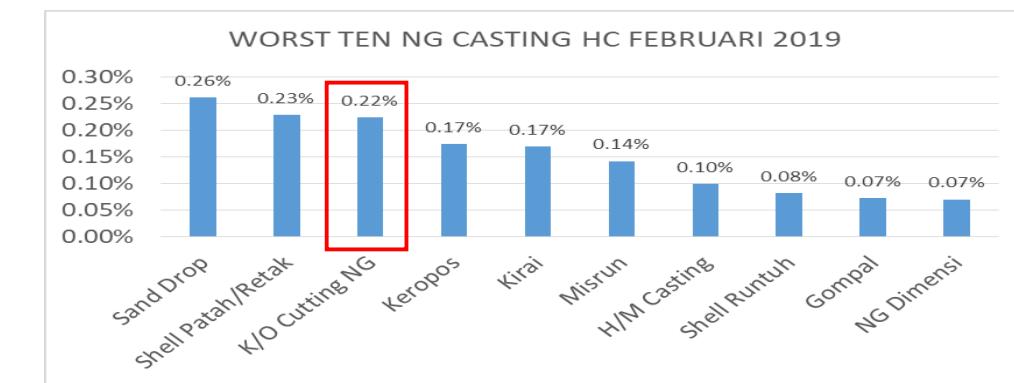
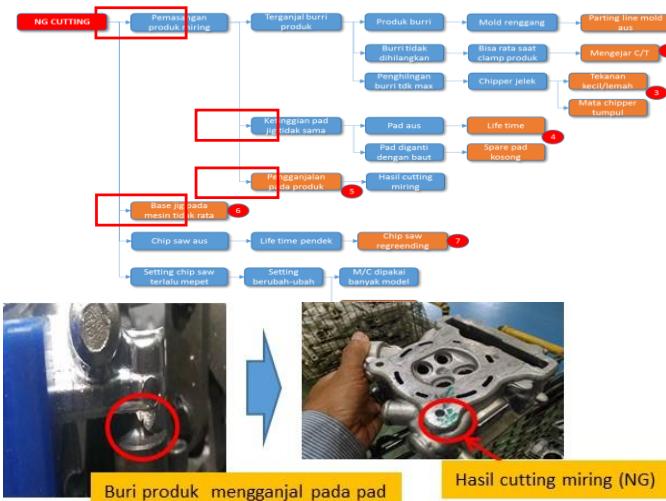
Head Cylinder - Casting



Fenomena :



Analisa :



Weakness:

Pemasangan produk miring

1. Base jig tidak rata
2. Ketinggian pad tidak sama
3. Pengganjalan pada produk

Activity:

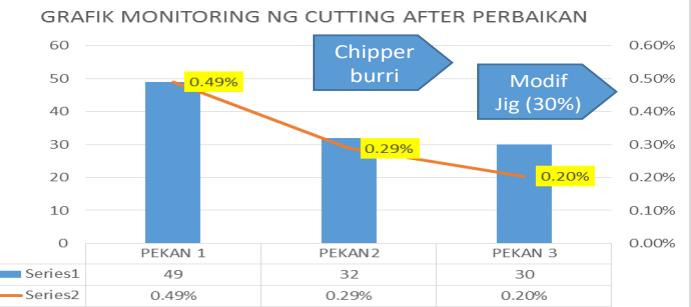
1. Base jig dibuat ujungnya lebih kecil
2. Menyamakan ketinggian pad
3. Penyiapan sim adjuster untuk setting pad



Ujung pad dibuat lebih kecil



> MONITORING

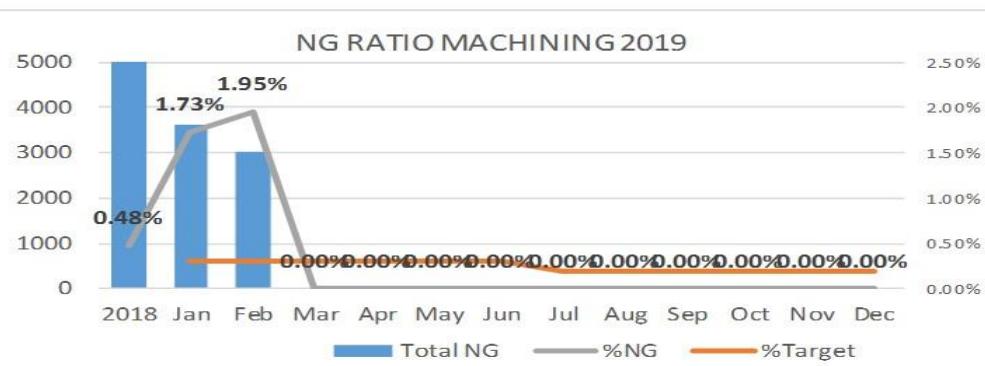


RENCANA TINDAKAN

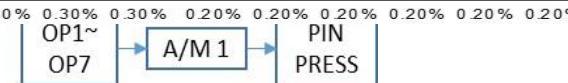
No	ITEM	Pjg	1	2	3	4	5	6	7	8	9	10	RC	Status
1	Asymping NG per model	Plat	→	→	→	→	→	→	→	→	→	→	SGA team	Close
2	Standarisasi base 0.5 mm	Plat	→	→	→	→	→	→	→	→	→	→	SGA team	Bersi Satu mesin
3	Pengadaan spare part	Plat	→	→	→	→	→	→	→	→	→	→	P. Saclit (mm) (kg)	
4	Menambahkan base 0.5 mm	Plat	→	→	→	→	→	→	→	→	→	→	P. Saclit (mm) (kg)	
5	Check sheet harian jig RC	Plat	→	→	→	→	→	→	→	→	→	→	P. Saclit (mm) (kg)	
6	Check mekanisme jig RC	Plat	→	→	→	→	→	→	→	→	→	→	P. Saclit (mm) (kg)	
7	Peningkatan ketahanan jig RC	Plat	→	→	→	→	→	→	→	→	→	→	P. Heru 3	
8	Pengembangan harian dan pengembangan space	Plat	→	→	→	→	→	→	→	→	→	→	P. Heru 3	
9	Pembentukan kepada operator base	Plat	→	→	→	→	→	→	→	→	→	→	P. Heru 5	Tujuan ganti operator
10	Antarmuka time chip saw regreeding	Plat	→	→	→	→	→	→	→	→	→	→	P. Heru 5	
11	Study chip saw dari Korea	Plat	→	→	→	→	→	→	→	→	→	→	P. Heru 5 & P. Saclit	

Perbaikan sistem kontrol jig & spare part KO RC

Head Cylinder - Machining

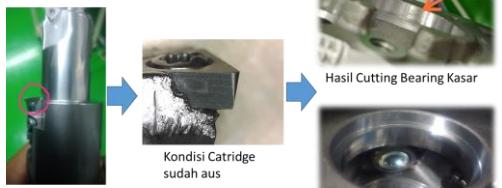


FLOW PROSES CUTTING BEARING



KASAR

→ insert chip miring karena cartridge sudah aus



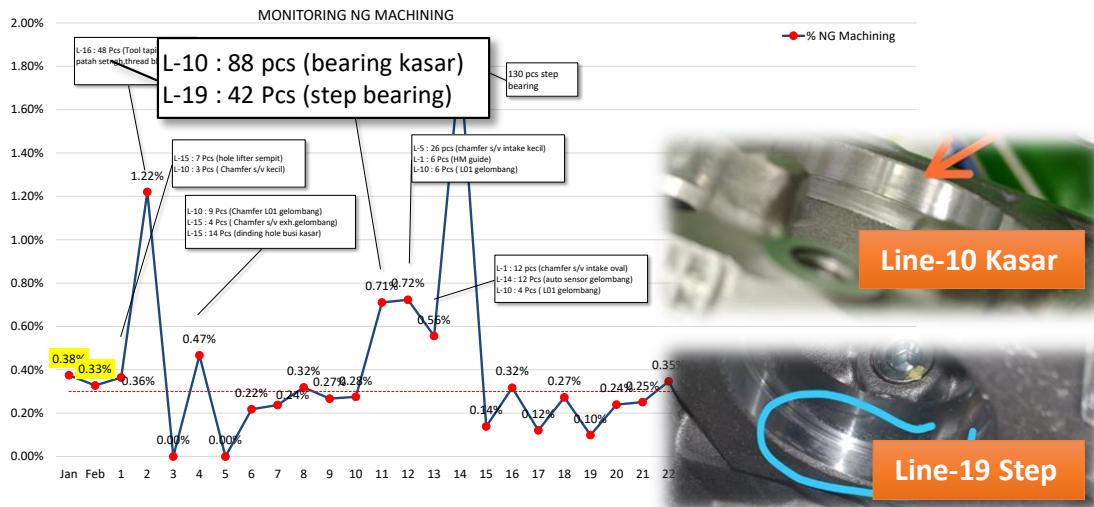
Hasil Cutting Bearing Ber-Step

STEP

→ Chip nongol karena ada clearance adjust depth



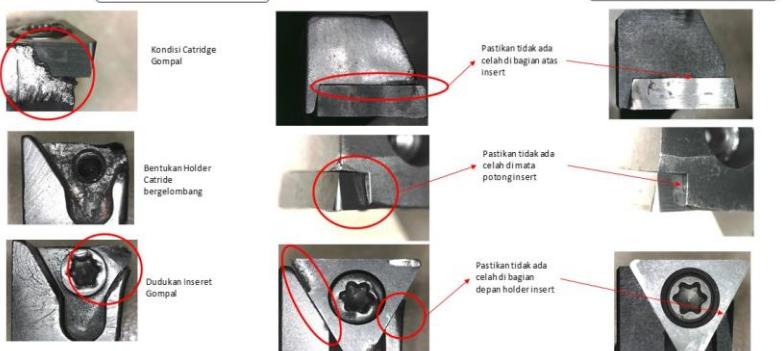
Chip abnormal karena cartridge sudah aus (terdapat clearance)



TINDAKAN



MEMASTIKAN CATRIDGE YANG DIGUNAKAN TIDAK CACAT DAN TIDAK AUS

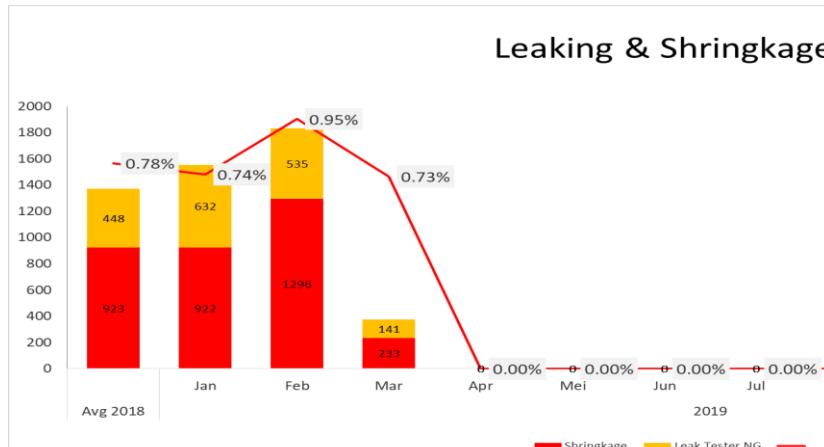


Edukasi Know-How untuk check catridge aus dan cacat

Next: check clearance by filler gauge

Head Cylinder – NG Casting di Machining

BACKGROUND

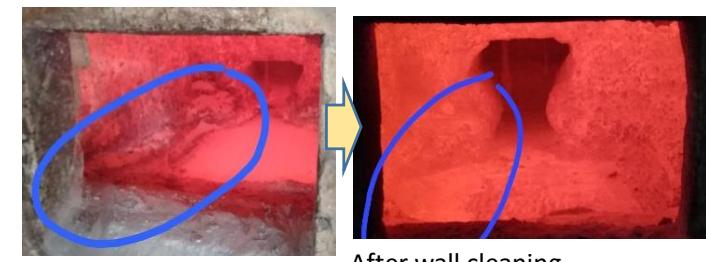
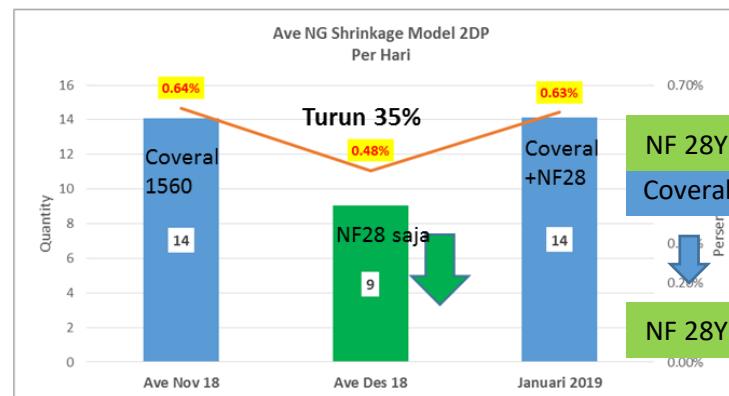


NG Leakage & Shrinkage
Feb : 0.95%



POTENSI PROBLEM LAIN

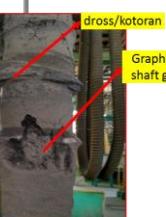
Pemakaian fluks model 2DP periode :12 nov s/d 27 des 2018



After wall cleaning

ANALISA PROSES

1. CEK PARAMETER PROSES MELTING

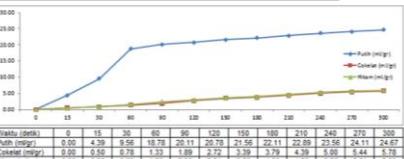


Hasil check actual GBF & Blate
→ Shaft GBF abnormal
(kotor & terdapat graphite)

2. CEK QUALITY NITROGEN



B. CEK KELEMBABAN FILTERCLOTH



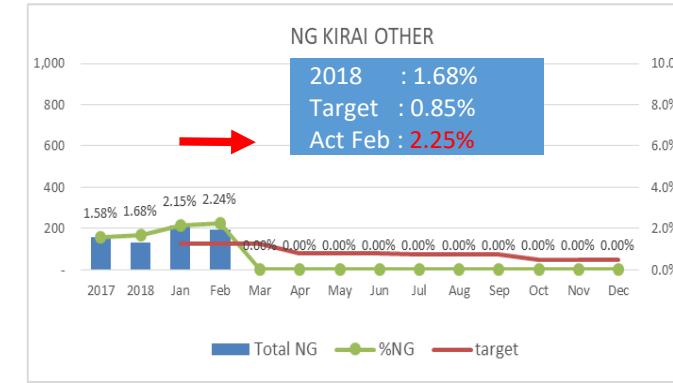
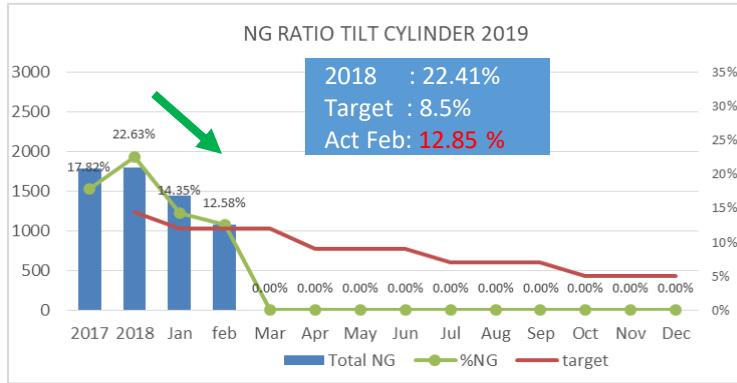
2. Banyaknya corrondum di dinding melting

Tindakan perbaikan (start end Feb):

1. Penggunaan NF28Y 100%
 2. Pembersihan/oksidasi melting 1x → 2x /shift (Yokotenkai IYM)
 3. Trial wall cleaning flux 1x/bulan

Monitoring NG Internal Process 2019

Tilt Cylinder



NG Kirai mengalami kenaikan 0.09% dengan actual Feb 2.25% (target: 0.85%)

PROBLEM



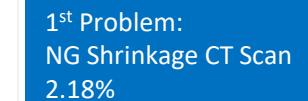
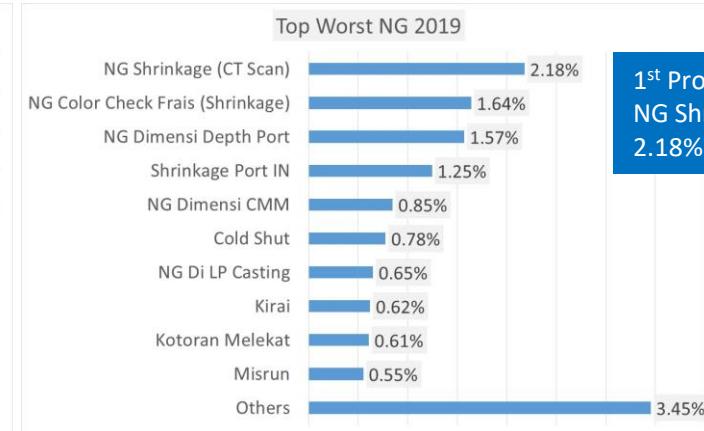
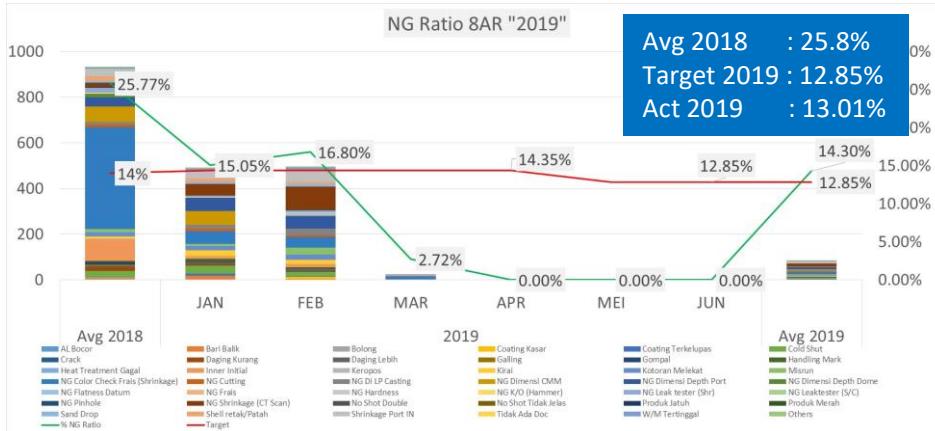
Center pin problem

- Coating cepat aus
- Bending
- Alluminium nempel
- Center pin susah membuka

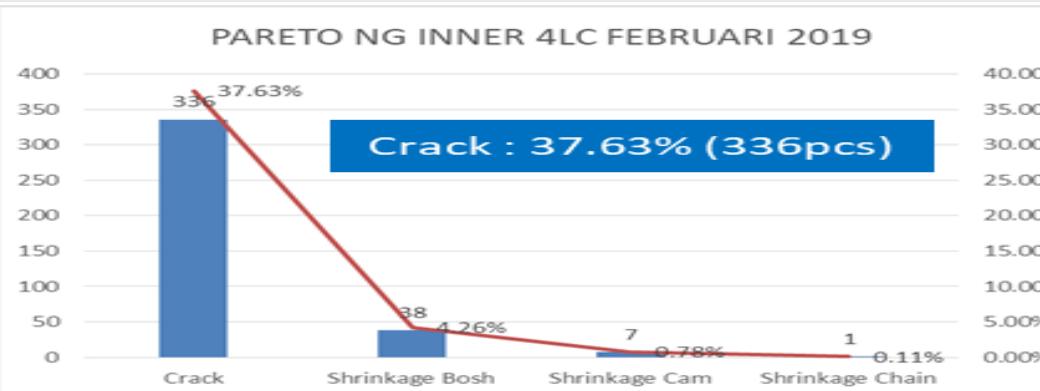
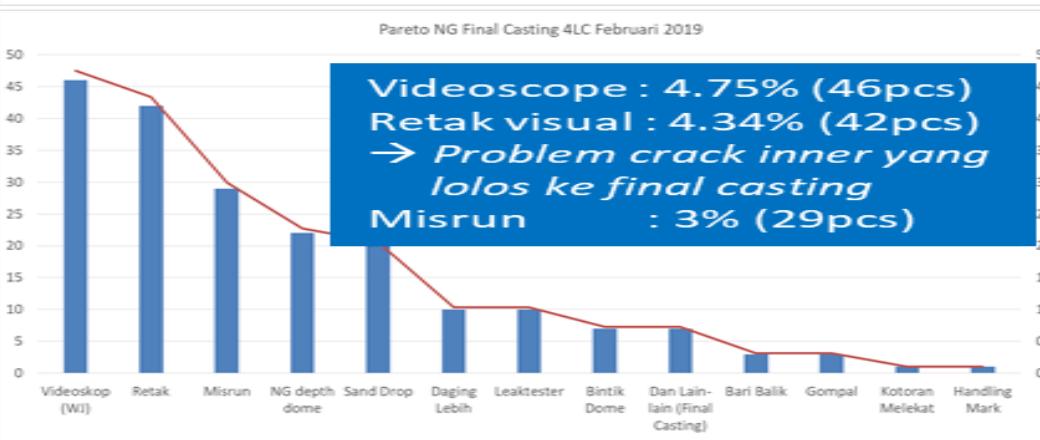
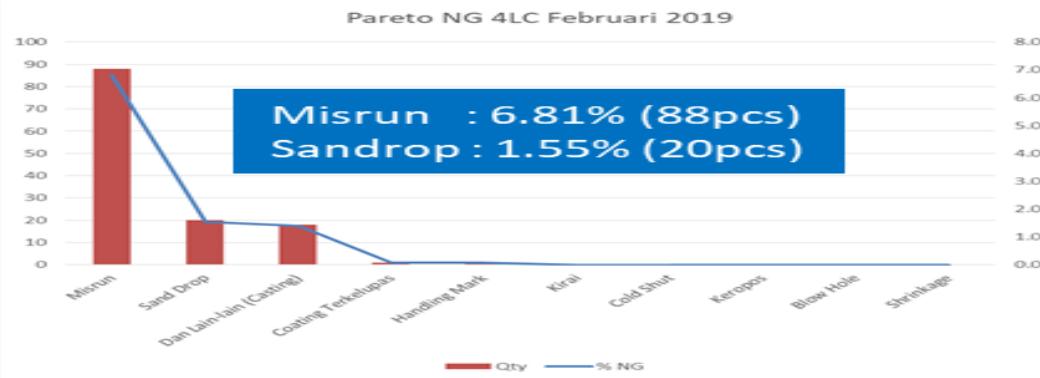
ACTIVITY

ITEM TINDAKAN			1	2
Keep Condition All Parameter			P	
Pengadaan Mesin Ceramic Coating Gd.3			A	→
Pengadaan Stock Center Pin(penggantian Insert Pin)			P	mfg mfg
Standarisasi Proses Ceramic Coating			A	→
			P	TRIAL
			A	→

8AR-Head Cylinder

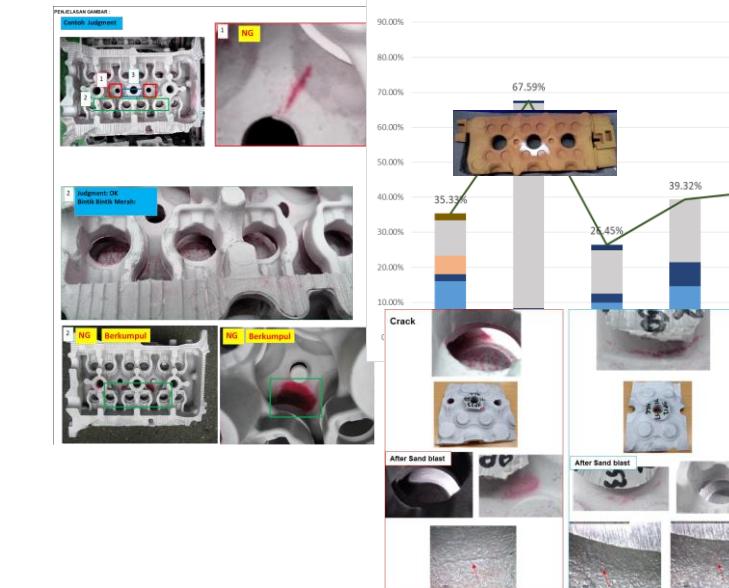


4LC-Nissan Head Cylinder

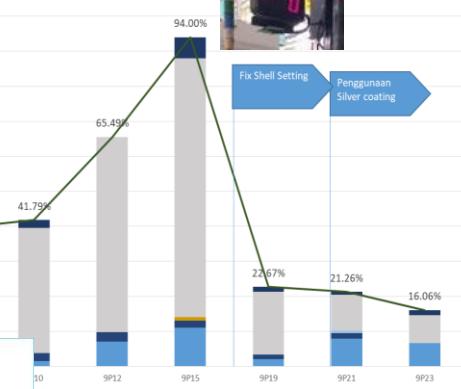


ACTIVITY

NG Inner/Crack



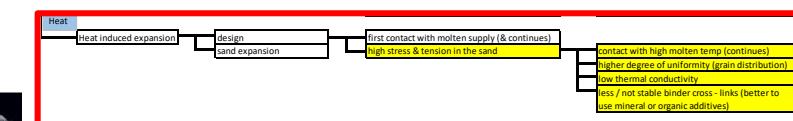
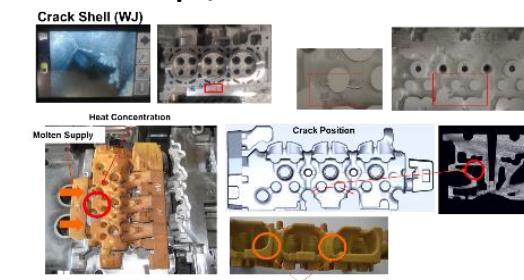
FEBRUARI 4LC



Start DP 9P19:

- Fix timer shell setting
- Penggunaan silver coating

Video Scope/Shellcore retak WJ



Problem:

Tekanan dan kekerasan yang tinggi (jalur masuk molten metal/molten supply)

Tindakan:

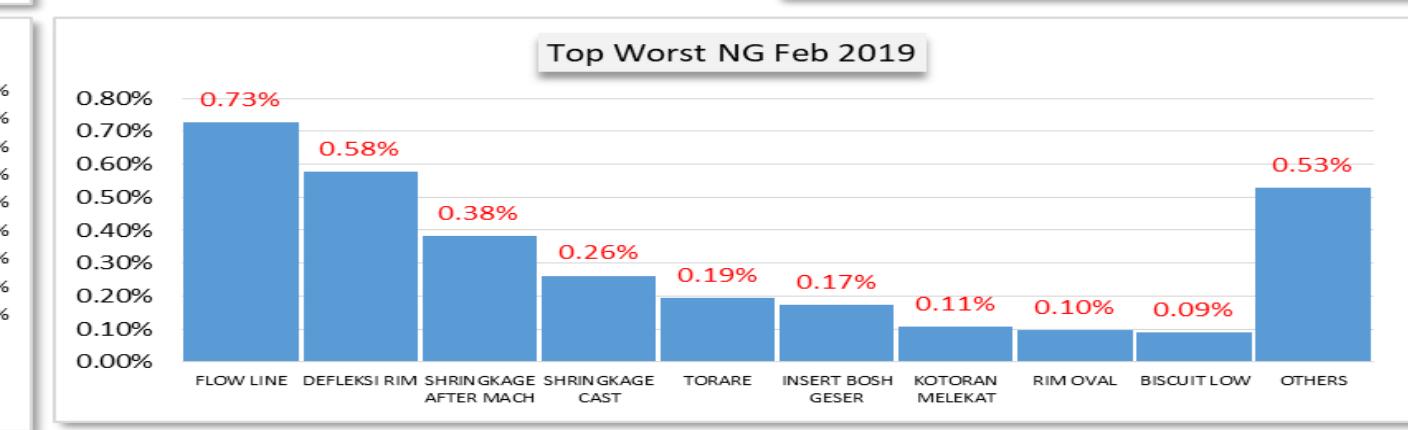
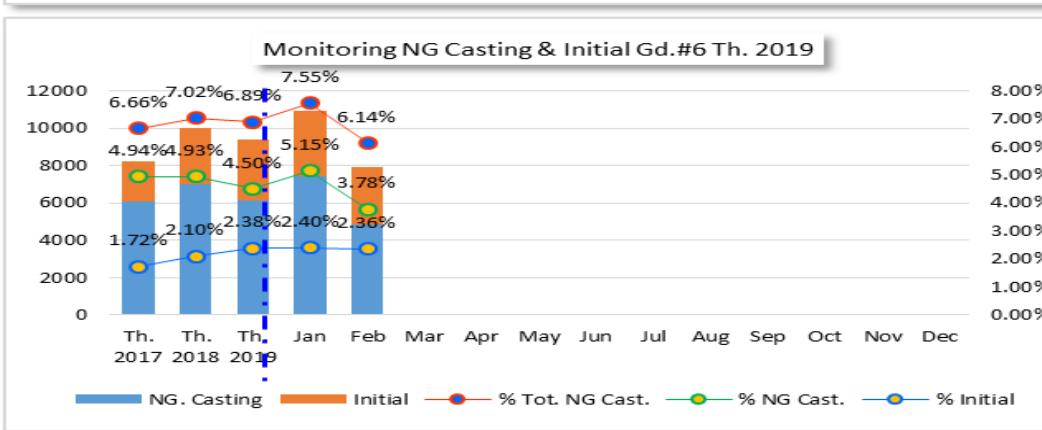
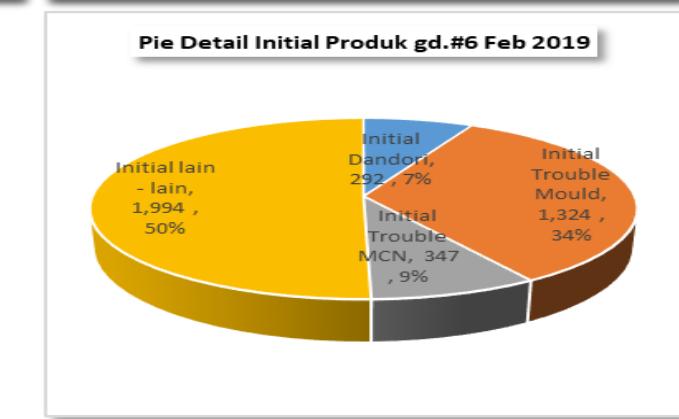
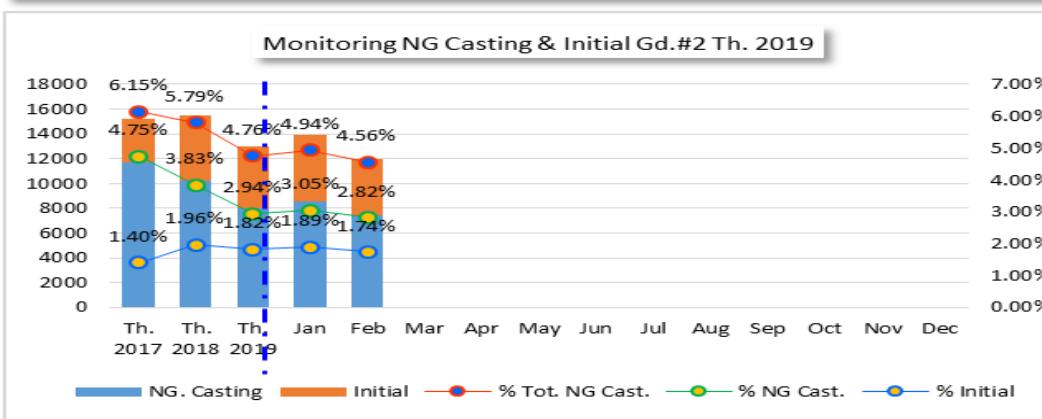
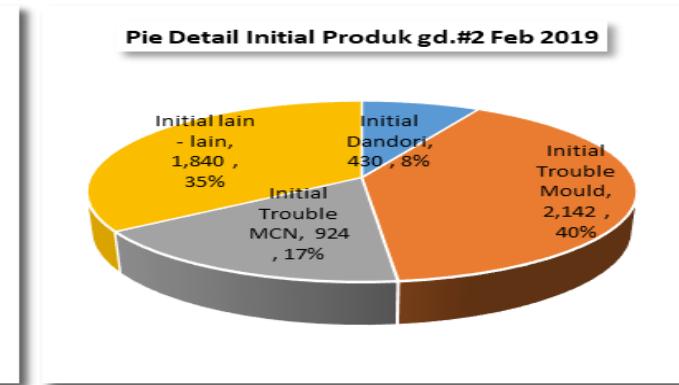
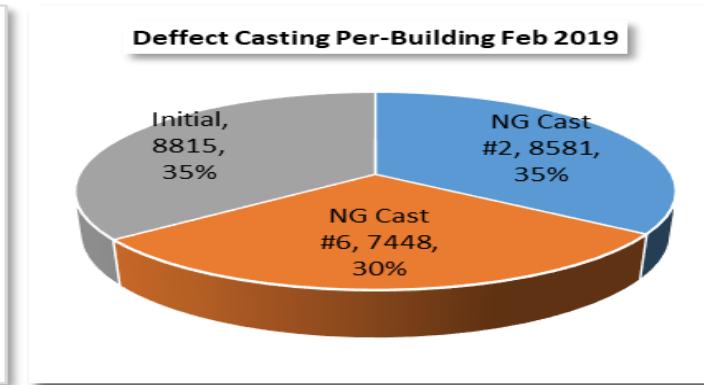
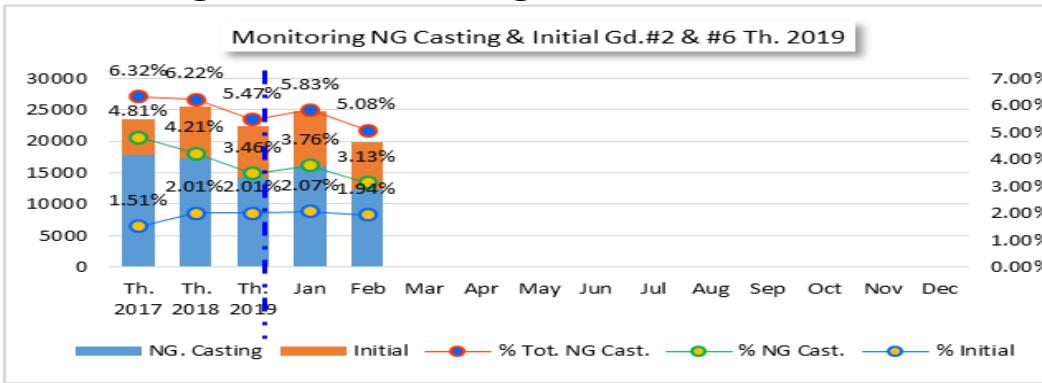
Pemberian Novolac Resin pada area shellcore yang retak untuk membuat kekuatan shellcore



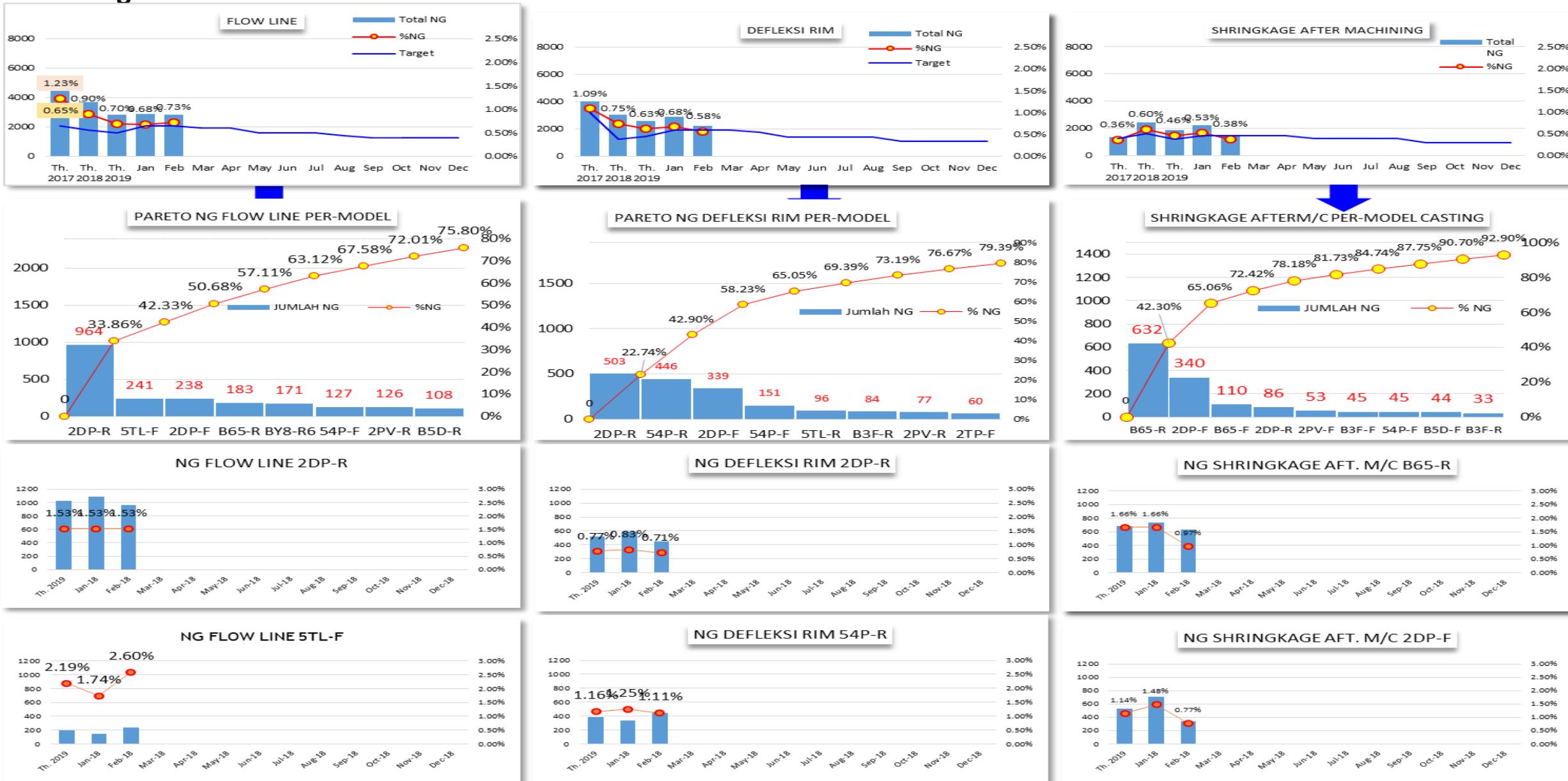
Casting Wheel

Produk	Item NG Internal	Result 2018	Target 2019	Result 2019	YTD	Monitoring Bulanan		
						January	February	Current Month
Cast Wheel	NG Casting #2	5.77%	4.77%	4.79%	X	4.94%	4.65%	O
	NG Casting #6	7.45%	4.77%	7.00%	X	7.71%	6.30%	X
	NG Machining #1	2.44%	0.82%	1.33%	X	1.62%	1.04%	X
	NG Machining #6	1.19%	0.50%	1.28%	X	1.19%	1.37%	X
	LSPR Painting YPMI	85.8%	90.00%	87.4%	X	87.4%	87.4%	X
Rear Arm	NG Casting	9.64%	5.00%	13.71%	X	15.80%	11.62%	X
	NG Machining	0.40%	0.10%	0.20%	X	0.29%	0.11%	X
Gravity Wheel	NG Casting	8.00%	6.10%	14.78%	X	14.78%	-	-

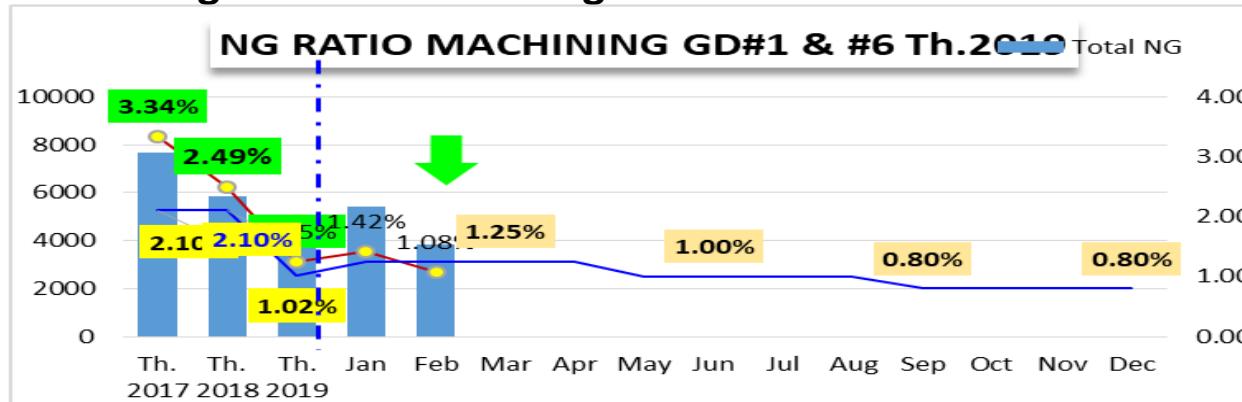
Casting Wheel - Casting



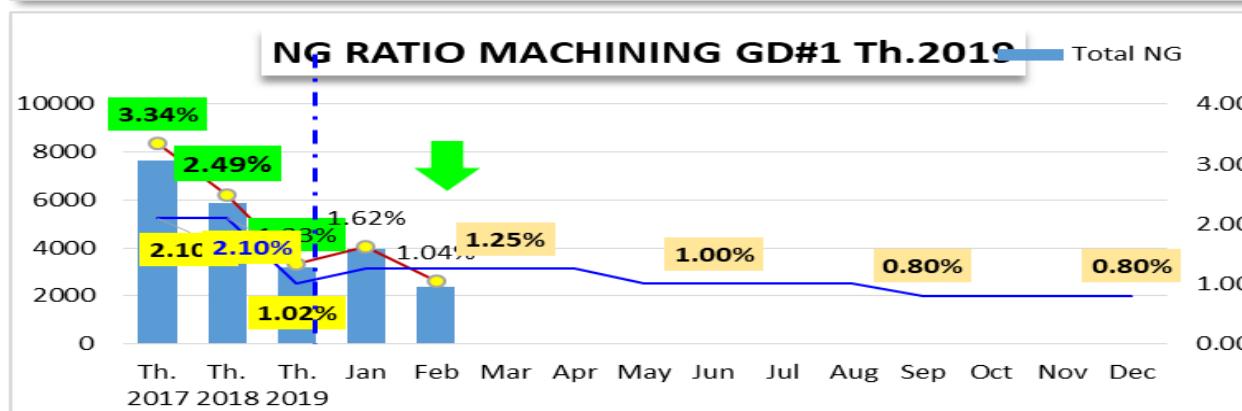
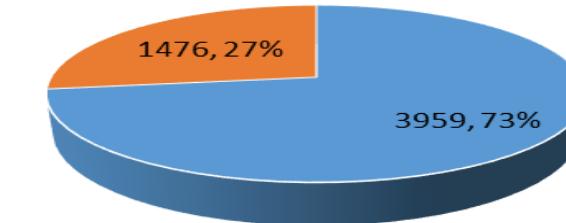
Casting Wheel



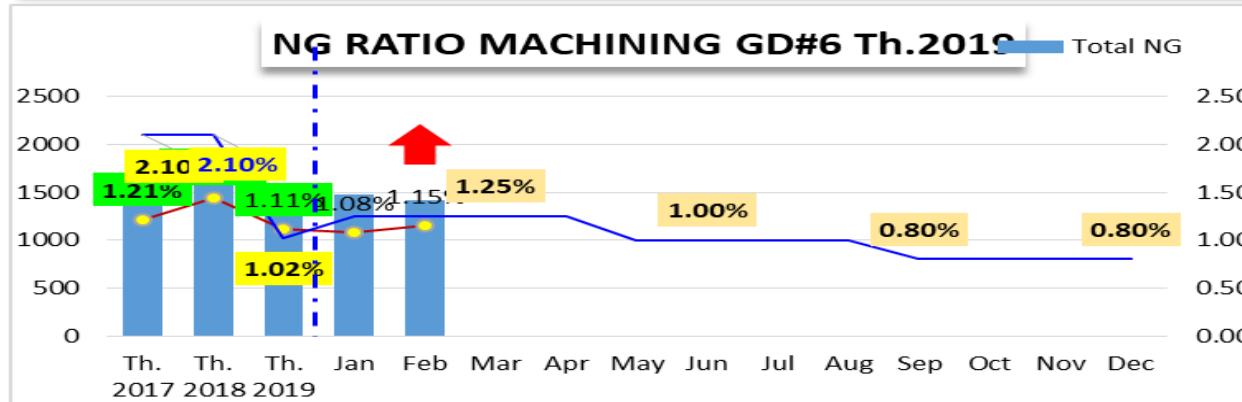
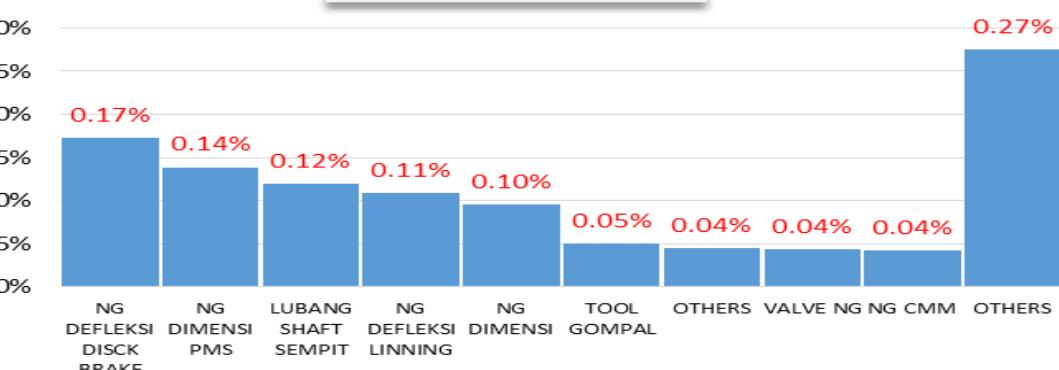
Casting Wheel - Machining



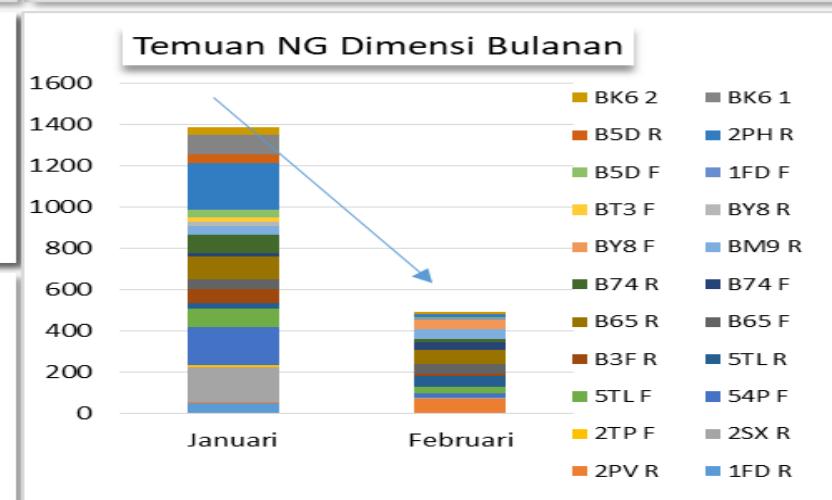
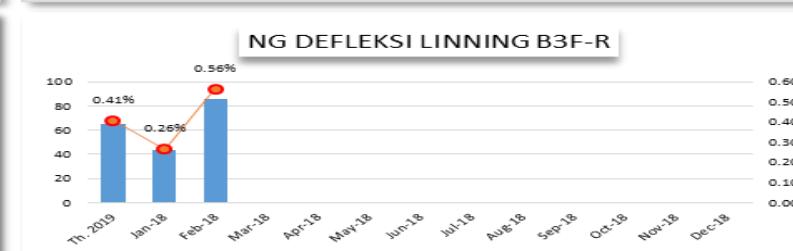
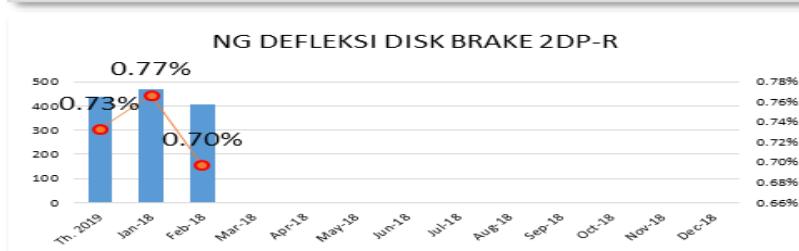
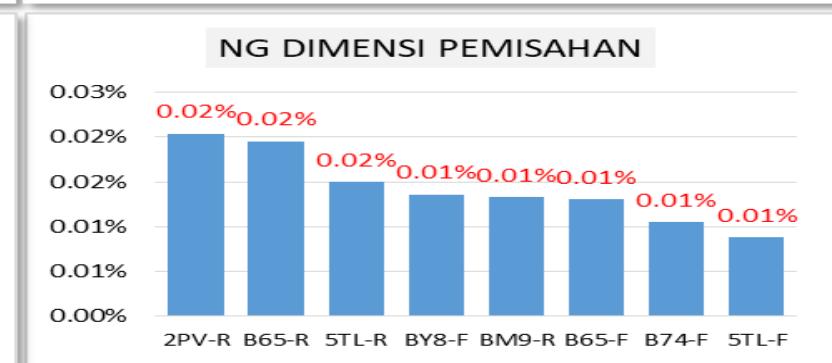
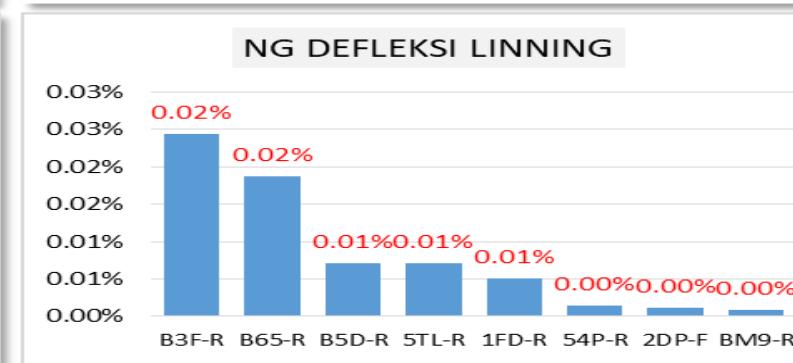
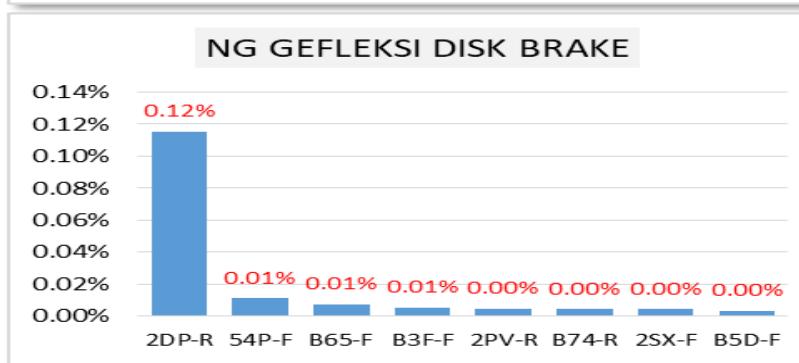
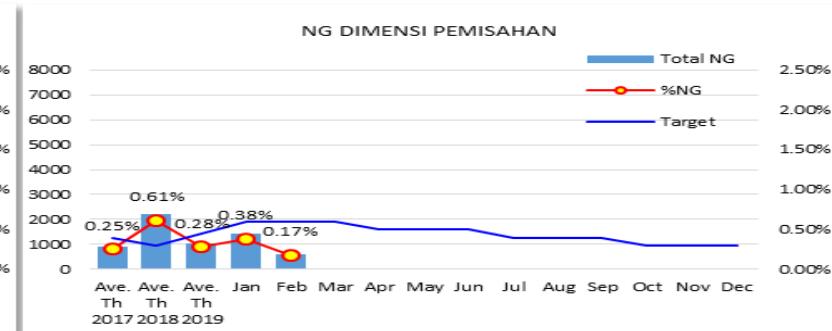
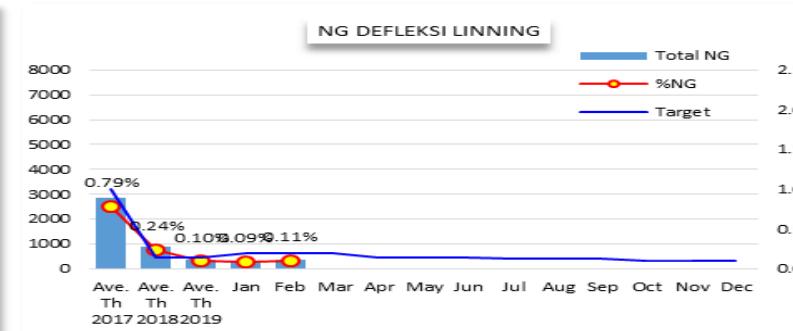
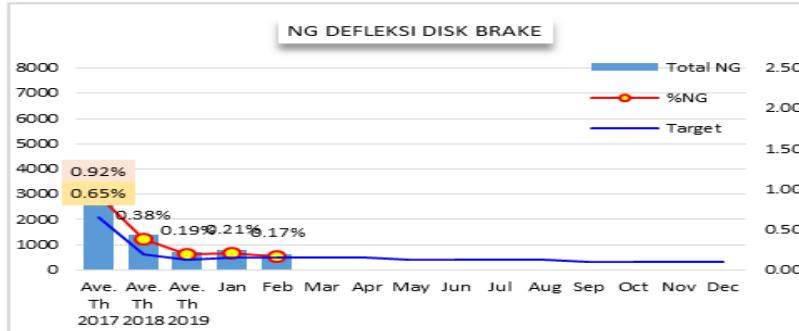
Defect Machining Per-Building
Feb 2019



Top Worst NG Feb 2019



Casting Wheel



Monitoring NG Internal Process 2019

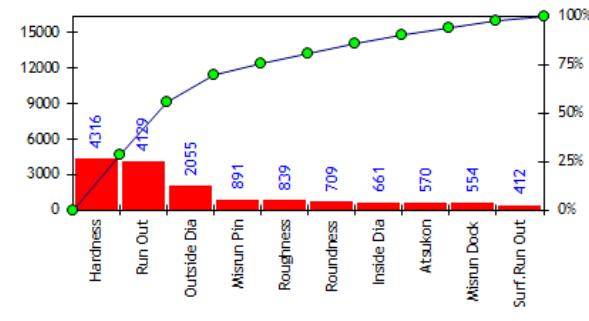
Gear & Axle – Piston – Crank Shaft

INTERNAL NG RATIO G&A, CRANK, PISTON, FORSHIFT

No	SHOP	Avg'18	Target	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg '19
1	TRANSMISSION	Axle Forging	0.05%	0.04%	0.17%	0.09%										0.13%
2		Gear Forging	0.56%	0.30%	0.34%	0.63%										0.49%
3		Cold Forging	0.02%	0.02%	0.01%	0.02%										0.01%
4		Package 123 BR	0.60%	0.38%	0.56%	0.38%										0.47%
5		Package 23 NO BR	0.18%	0.11%	0.08%	0.08%										0.08%
6		MT-AD	0.05%	0.03%	0.06%	0.23%										0.14%
7		MT-AM	0.04%	0.03%	0.06%	0.09%										0.08%
8		AT-Matic	0.12%	0.06%	0.08%	0.07%										0.08%
9		H/T	0.14%	0.06%	0.81%	1.00%										0.90%
10		Gear Mach. After	0.36%	0.27%	0.34%	0.32%										0.33%
11		Ext-Grinding	0.93%	0.48%	1.14%	0.80%										0.97%
12		Plating	0.33%	0.69%	1.11%	0.71%										0.91%
13		Assembling	0.07%	0.05%	0.08%	0.09%										0.08%
14	BALANCER	B. Gear Forging	0.19%	0.11%	0.08%	0.14%										0.11%
15		B. Gear Mach Bef	0.28%	0.16%	0.22%	0.31%										0.27%
16		B. Gear Mach Aft	0.43%	0.32%	0.72%	0.24%										0.48%
17	CRANK	Crank Mach Bef	0.44%	0.33%	0.45%	0.43%										0.44%
18		Crank Mach Aft	0.24%	0.18%	0.23%	0.05%										0.14%
19	PISTON	Piston Forging	0.53%	0.40%	0.32%	0.33%										0.32%
20		Piston Mach Bef	0.93%	0.55%	0.65%	0.74%										0.69%
21		Piston Plating	0.88%	0.29%	0.76%	0.58%										0.67%
22		Piston Mach Aft	0.41%	0.31%	0.42%	0.43%										0.43%
23		Final Check	2.35%	0.98%	2.85%	2.66%										2.75%
24	F/S	Forkshift	4.25%	3.19%	2.54%	3.92%										3.23%

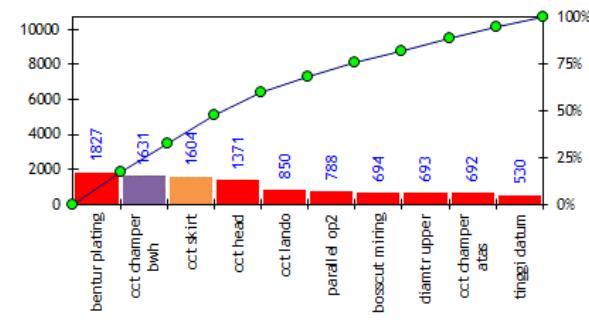
G&A

10 WORST DEFECT ON FEB '19



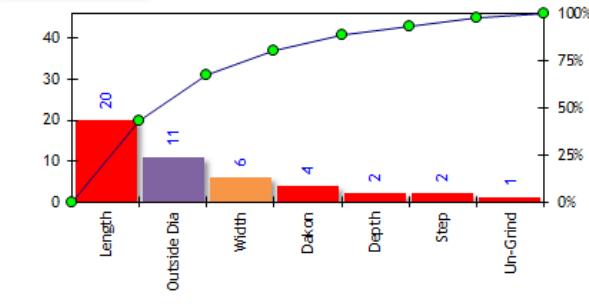
PISTON

10 WORST DEFECT ON FEB '19



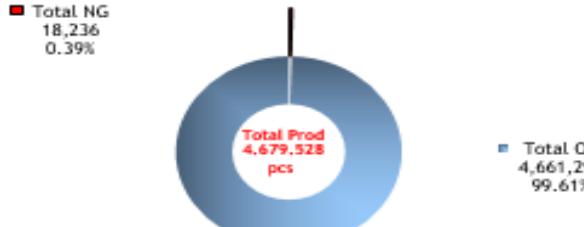
CRANK

DEFECT CRANKSHAFT ON FEB '19



Gear & Axle

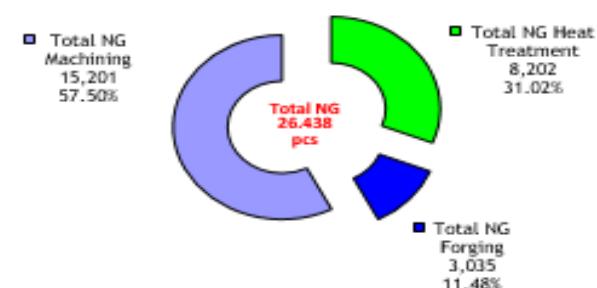
DEFECT PERCENTAGE ON G&A PROCESS FEB '18



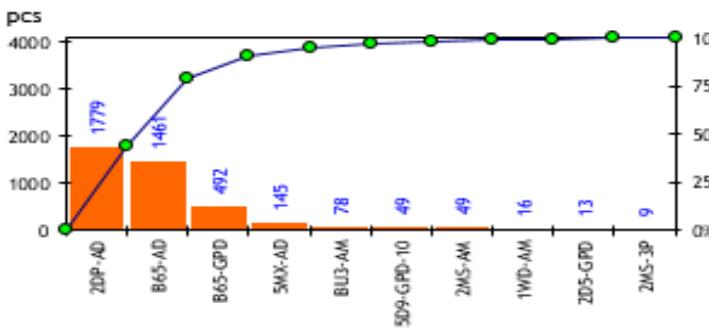
NG RATIO ON GEAR TRANSMISSION PROCESS 2018



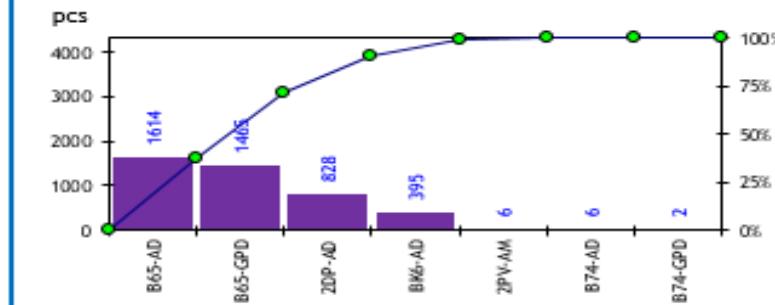
DEFECT EACH SHOP ON FEB '18



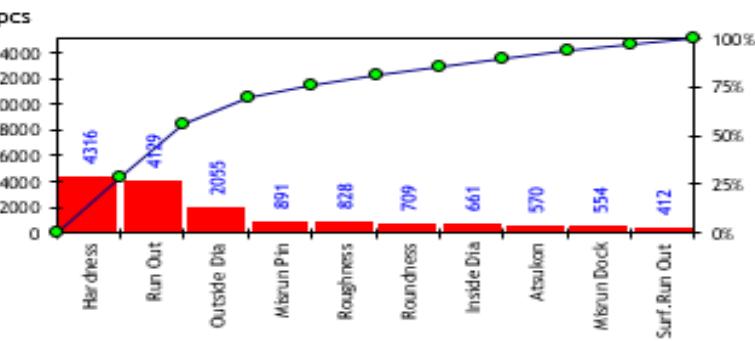
10 WORST RUN OUT DEFECT EACH MODEL FEB '18



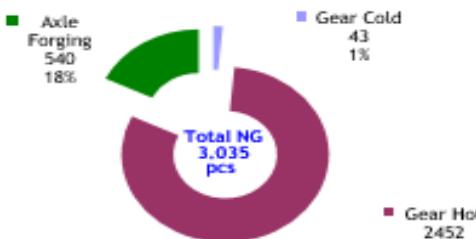
10 WORST HARDNESS DEFECT EACH MODEL FEB '18



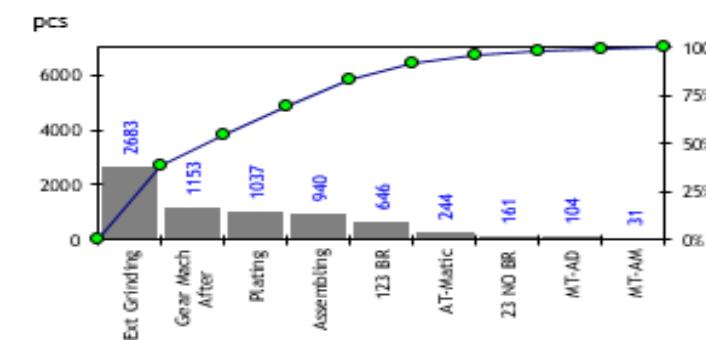
10 WORST DEFECT ON FEB '18



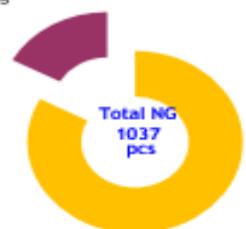
DEFECT EACH PROCESS ON FORGING



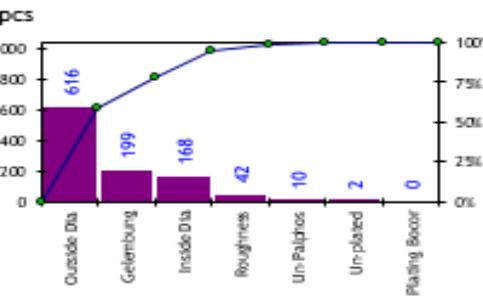
DEFECT EACH PROCESS ON MACHINING



DEFECT EACH PROCESS ON PALFOS

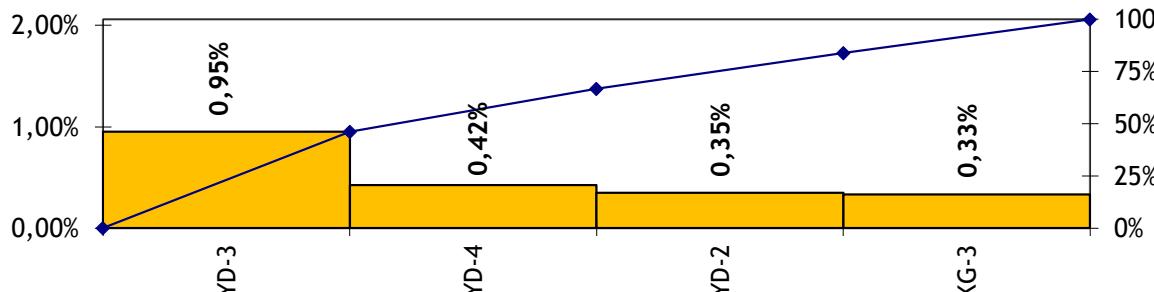


DEFECT ON PLATING PROCESS FEB '18



Gear & Axle – Ext. Grinding

Ratio NG Per Mesin



Mesin		2018												Remark	Over Houl	%Prod B65-AD	2019		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec				Jan	Feb	Mar
TOYODA-1	OP-1	v	v	v	v	v	v	v	v	v	v	v	v	OK	v		v	v	v
	OP-2	v	v	v	v	v	v	v	v	v	v	v	v	OK	v		v	v	v
TOYODA-2	OP-1	x	x	x	x	x	x	x	x	x	x	x	x	Tidak ada Autosizer Sett	x	2%	x	x	x
	OP-2													baru	x		v	v	v
TOYODA-3	OP-1	v	v	v	v	v	v	v	v	v	v	x	x	Error	x	83%	v	v	v
	OP-2	v	v	v	v	x	x	x	x	x	x	v	v	OK	x		x	x	x
TOYODA-4	OP-1	v	v	v	v	v	v	v	v	v	v	v	v	Rusak finger	v	13%	x	x	x
	OP-2	x	x	x	x	x	v	v	v	v	v	v	v	Error	v		x	x	x
TOYODA-5	OP-1	x	x	x	x	x	x	x	x	x	x	x	x	ok	Akurasi Cek		x	v	v
	OP-2	x	x	x	x	x	x	x	x	x	x	x	x	OK	Akurasi Cek		x	v	v
PKG-3	MTB-1										x	x	x	Fulcom Error	x	2.5%	x	x	x
	MTB-2										x	x	x	Hidrolik macet	x		x	x	x

Gear & Axle – Ext. Grinding

Before

Overhaul Table

Activity

1. Parameter Backlash



Parameter backlash 420
(Std param <300)

Ganti Ballscrew z axis

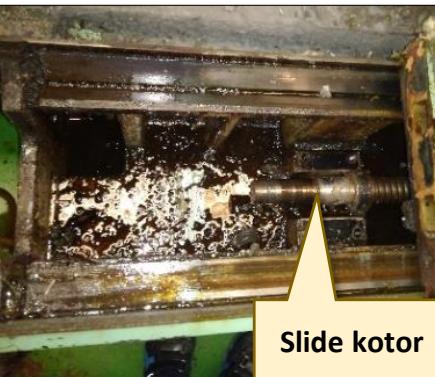


Cleaning slide table

Ganti Bearing Ballscrew Z axis



2. Kondisi Table

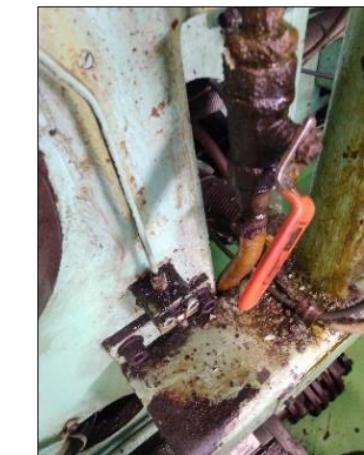


Slide kotor

Cleaning dan cek kondisi Turcite Slide Table

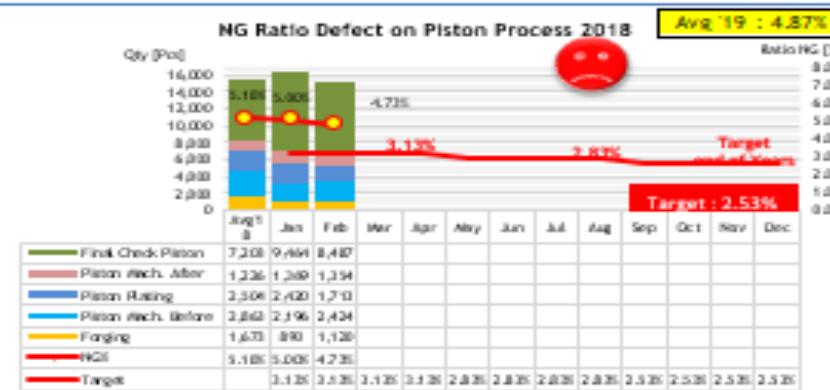


Cleaning jalur dan pipa lubrikasi

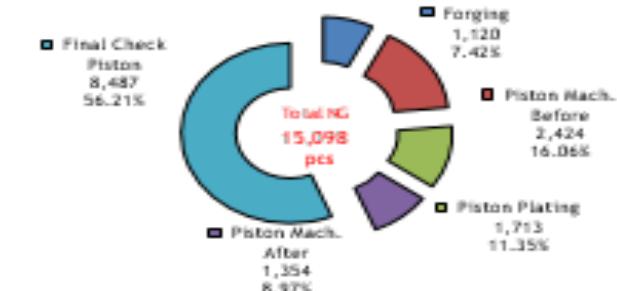


Next Step TYD-3:
Perbaikan Autosizer OP-1 & Overhaul
→ May 2019

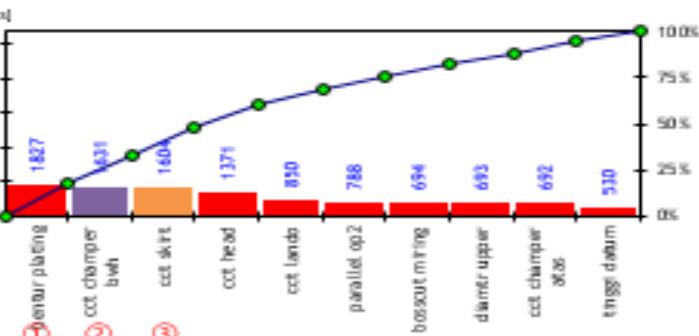
Piston



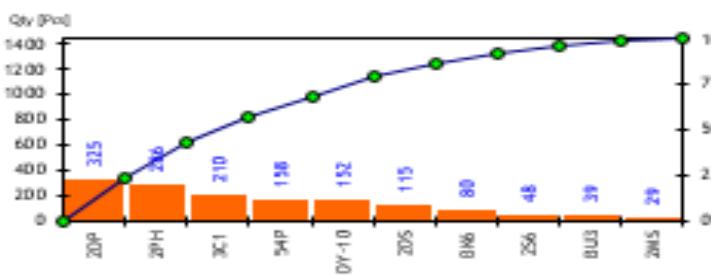
DEFECT EACH SHOP ON FEB '19



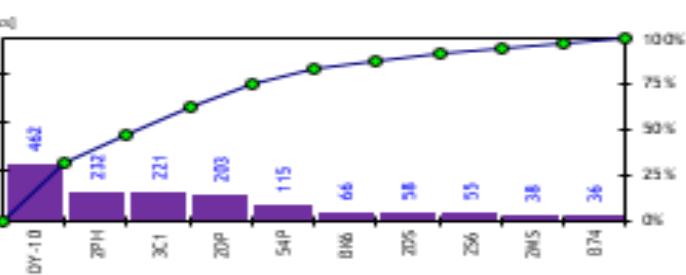
10 WORST DEFECT ON FEB '19



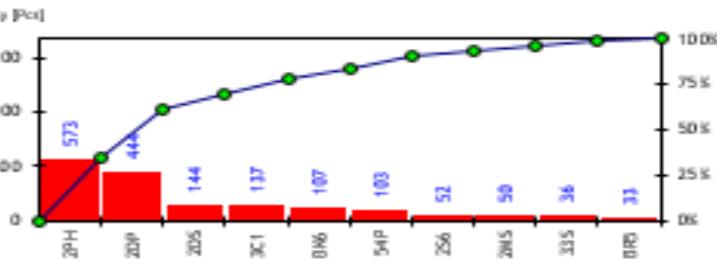
③ WORST CCT SKIRT EACH MODEL FEB '19



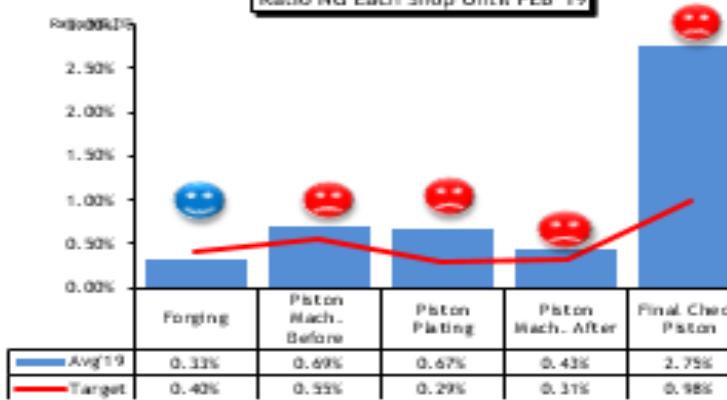
② WORST CCT CHAMFER BAWAH DEFECT EACH MODEL FEB '19



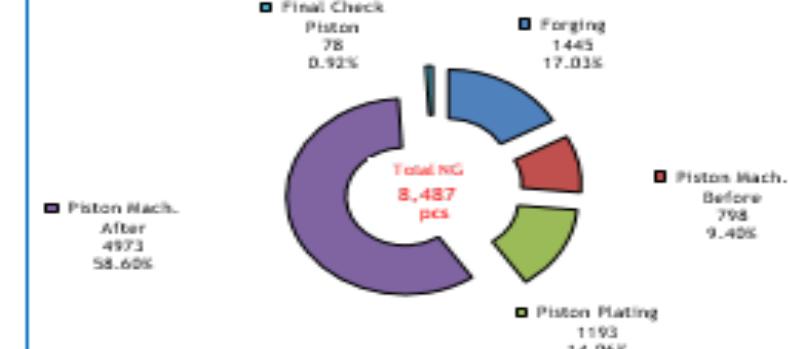
① WORST BENTUR PLATING DEFECT EACH MODEL FEB '19



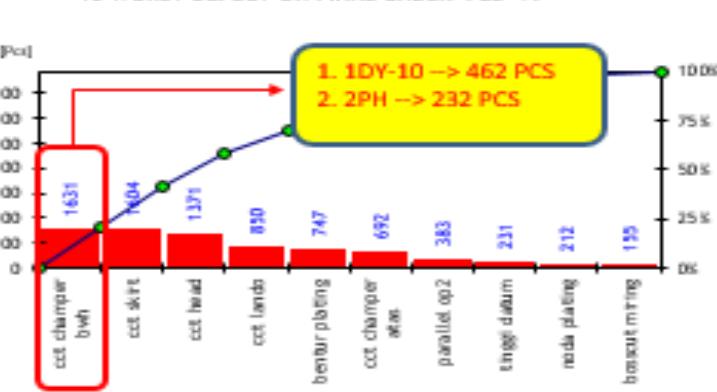
Ratio NG Each Shop Until FEB '19



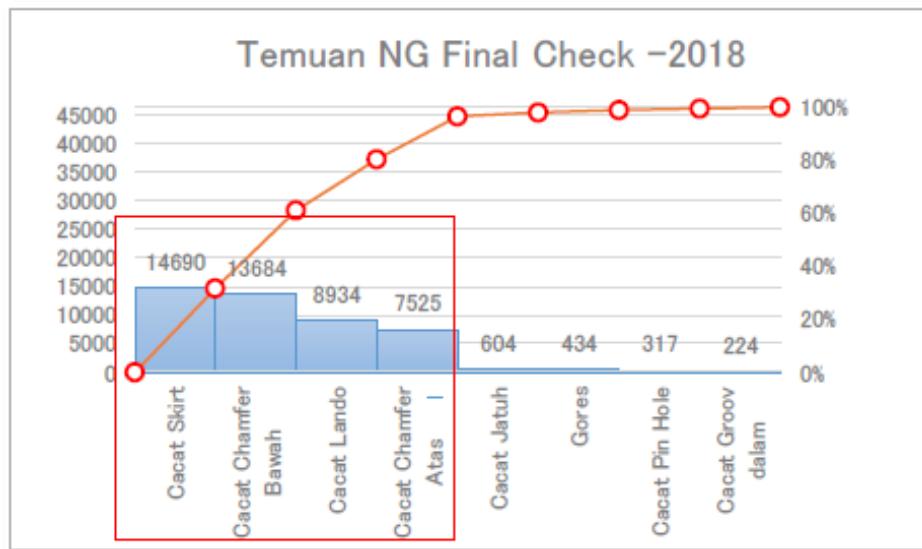
DEFECT ORIGIN EACH SHOP ON FINAL CHECK FEB '19



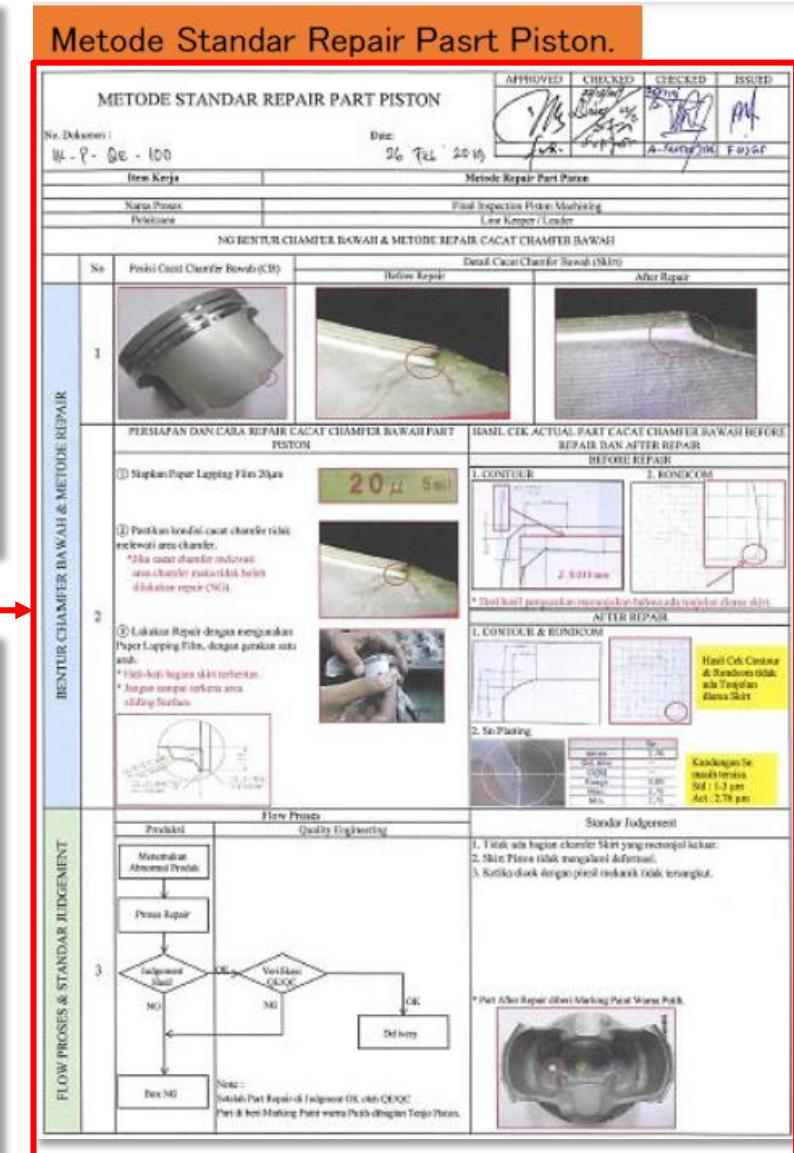
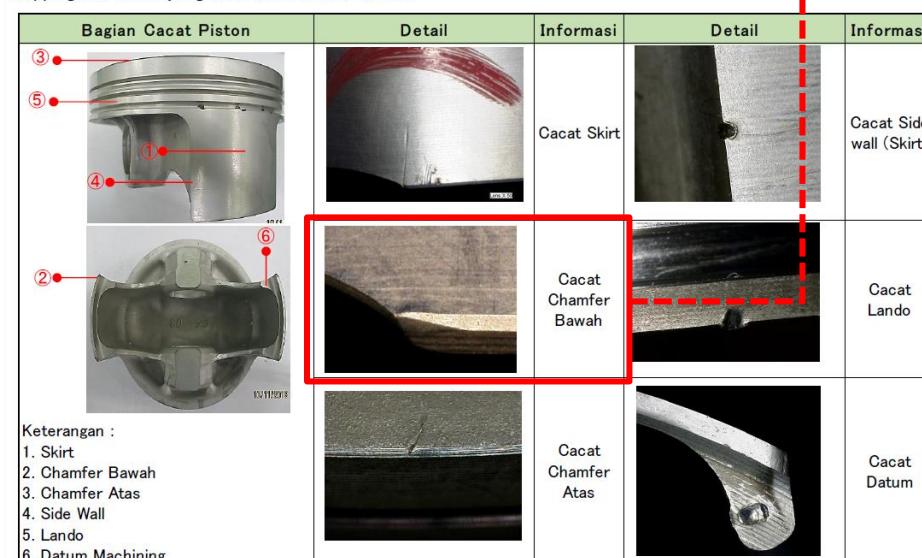
10 WORST DEFECT ON FINAL CHECK FEB '19



Piston



Mapping NG Cacat yang ditemukan di Final Check



Edukasi Member



Evaluasi (MSA)

Attribute Agreement Analysis Worksheet										
Site ID		Address		City		State		Zip Code		Score
Product		Retailer		Retailer		Retailer		Retailer		
Characteristic/Parameter		Appearance		Texture		Scent		Flavor		
Score Type		OK		Good		Fair		Poor		
Product	Characteristic / Parameter	Appraiser 1 (Score 0-5)	Appraiser 2 (Score 0-5)	Appraiser 3 (Score 0-5)	Appraiser 4 (Score 0-5)	Appraiser 5 (Score 0-5)	Appraiser 6 (Score 0-5)	Appraiser 7 (Score 0-5)	Appraiser 8 (Score 0-5)	Appraiser 9 (Score 0-5)
1	HC	OK								
2	SH	OK								
3	SC	OK								
4	SH	OK								
5	SH	OK								
6	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
7	SH	OK								
8	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
9	HC	OK								
10	SH	OK								
Agreement Score Within Appraiser		Total:		Avg:		Max:		0:		0
Agreement Score w/ Standard		100.0%		100.0%		100.0%		100.0%		100.0%
Agreement Score Between Appraisers		Total:		Avg:		Max:		0:		0
Agreement Score All Appraisers vs Standard		Total:		Avg:		Max:		0:		0.0%

Piston

Metode Standar Repair Pasrt Piston.

METODE STANDAR REPAIR PART PISTON		APPROVED <i>[Signature]</i> Date: 26 Feb 2013 FIR.	CHECKED <i>[Signature]</i> Date: 26 Feb 2013 FIR.	CHECKED <i>[Signature]</i> Date: 26 Feb 2013 FIR.	ISSUED <i>[Signature]</i>
No. Dokumen : W-2-QE-100		Date: 26 Feb 2013			
Item Kerja		Metode Repair Part Piston			
Nama Posisi Pelembaga		Final Inspection Piston Matching Line Keeper / Leader			
NG BENTUR CHAMFER BAWAH & METODE REPAIR CACAT CHAMFER BAWAH					
BENTUR CHAMFER BAWAH & METODE REPAIR	No	Prediksi Cacat Chamfer Bawah (CB)	Detail Cacat Chamfer Bawah (Skin)		
	1		<i>Hollow Repair</i>		<i>After Repair</i>
PERSIAPAN DAN CARA REPAIR CACAT CHAMFER BAWAH PART PISTON					
BENTUR CHAMFER BAWAH & METODE REPAIR	1	(1) Stipkan Paper Lapping Film 20µm		BASIC, CTK, ACTUAL PART CACAT CHAMFER BAWAH BEFORE REPAIR DAN AFTER REPAIR	
	2	(2) Pastikan kedua sisi chamfer tidak melintasi area chamfer. * Jika ada chamfer ini harus: - area chamfer ini tidak boleh dilakukan repair CNG. (3) Lakukan Repair dengan menggunakan Paper Lapping Film, dengan gerakan satu arah. * Gerak halus ke arah yang berlawanan. * Jangan sampai terkena area sliding surface.		<i>BEFORE REPAIR</i>	<i>AFTER REPAIR</i>
BENTUR CHAMFER BAWAH & METODE REPAIR	3			1. CONTOUR & RUNDOWN	2. RUNDOWN
					* Dari hasil perbaikan ini maka kita hanya ada teknologi cleane skin.
BENTUR CHAMFER BAWAH & METODE REPAIR	4		View Prints	Standar Judgement	
				1. Tidak ada lingkar chamfer skin yang melebihi ukuran. 2. Skin Plate tidak mengandung deformasi. 3. Ketika dilihat dengan mata telanjang tidak tersingkat. * Part After Repair ohne Marking Point Warna Putih.	
FLOW PROCES & STANDAR JUDGEMENT	5		Fix NG		
				Note : Seluruh Part Repair di Jugement OK, coba QE/QC Part di keti Marking Point warna Putih dengan Tinta Pita.	

Edukasi Member



Evaluasi (MSA)



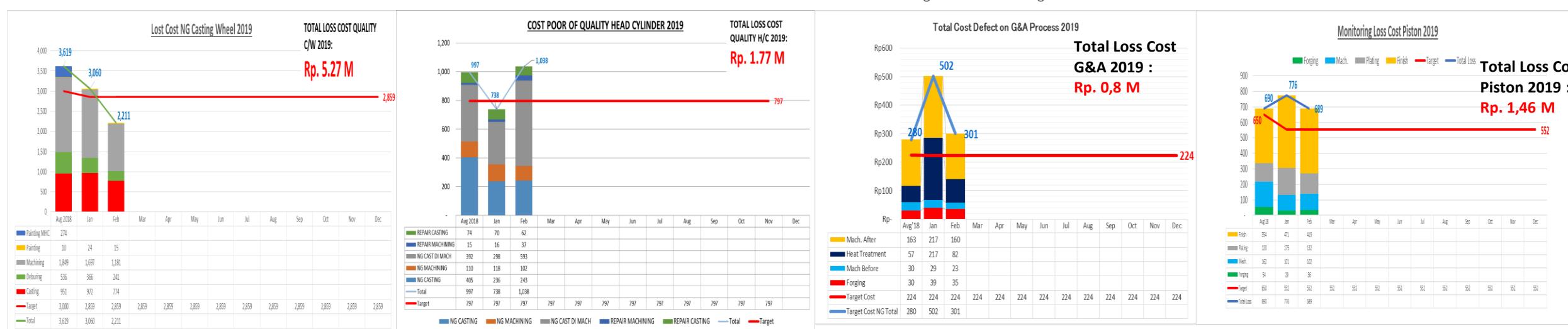
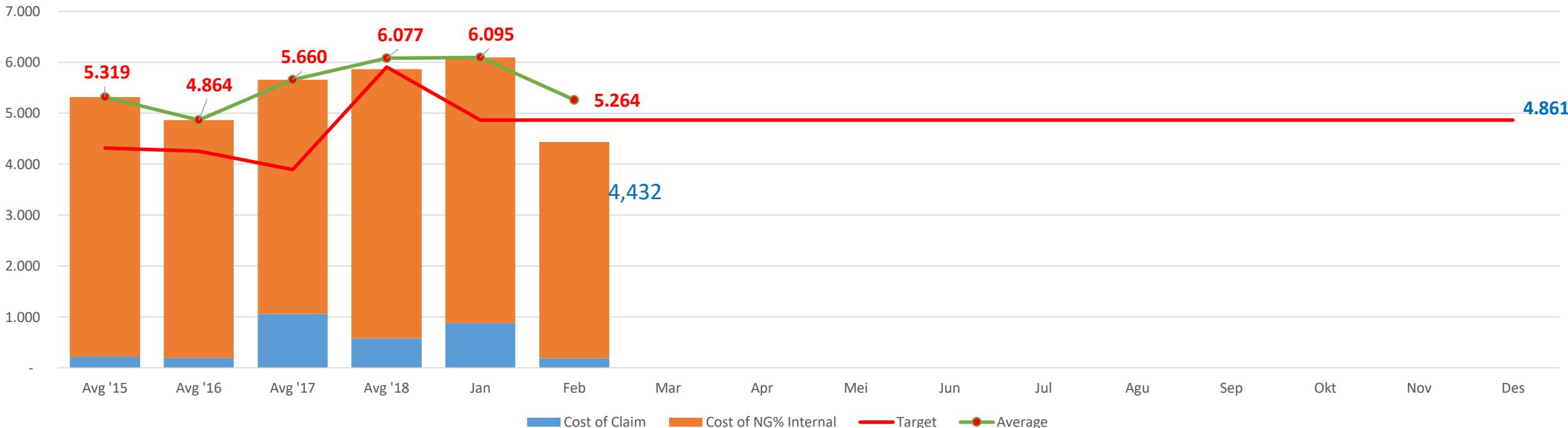
Temuan Part CB bulan Maret' 19

Qty : 100 pcs
OK : 38 pcs (Sudah Repair)
NG : 2 pcs



Monitoring Cost of Poor Quality 2019

Cost of Poor Quality 2019



Progress Zero set Activity

Februari

Maret

Mengetahui Level Saat Ini

PE
Akurasi Tool

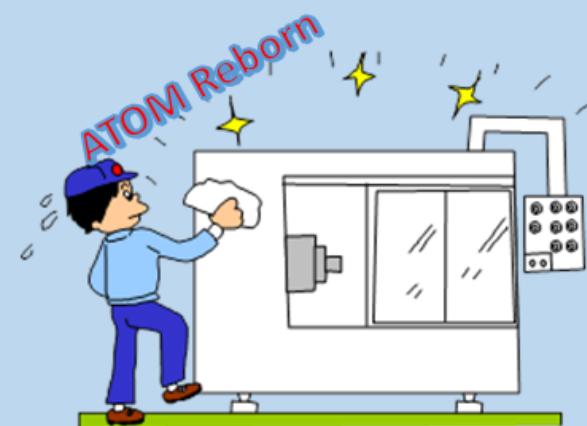


Data Proses vs Aktual

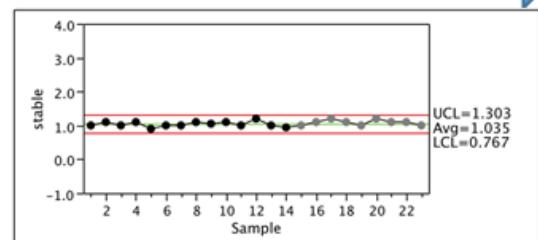
Produksi → Flatness Jig

ON PROGRESS

Mtc
Akurasi Mesin



Monitoring & Standardisasi



SPC
(Statistic Process Control)
Reduce trouble, NG & Pemisahan

Line	Model	OP	Petugas	Hasil Pengacakan	RADI	PAD II	PAD III	PAD IV	PAD V
C5 1	2PH-R	1	Andri	Before	0.000	0.025	0.010		
				After					
C5 2	2PH-R	1	Andri	Before	0.000	0.015	0.010		
				After					
C6 1	2PH-R	1	Andri	Before	0.000	0.035	0.022		
				After	0.00	0.020	0.022		
C6 2	2PH-R	2	Andri	Before	0.000	0.010	0.015	0.008	0.005
								0.008	0.003

Normalisasi flatness jig

Poin	Item Cek	Standar	Aktual Pengacakan Line Mach			
			C5-1	C5-2	C6-1	C6-2
1	Kesejajaran sub-table terhadap meja	0.010	0.005	0.001	0.002	0.009
2	Kerataan meja leveling	0.020	0	0	0	0
3	Kerataan permukaan meja (dudukan jig)	X-Axis → 0.030 Y-Axis → 0.020	OK OK	OK OK	OK OK	OK OK
4	Kerataan permukaan meja	X-Axis → 0.030 Y-Axis → 0.020	OK OK	OK OK	OK OK	OK OK
5	Kerataan permukaan meja (dudukan jig)	X-Z → 0.020 Y-Z → 0.020	OK OK	OK OK	OK OK	OK OK
6	Kesejajaran sub-table terhadap meja (x-axis)	0.030	0.026	0.014	0.022	0.018
7	Run-out spindle	C1 → 0.010 C2 → 0.020	0.001 0.003	0.010 0.007	0.001 0.005	0.010 0.010
	Ketekaluan ran spindle	D1 → 0.020	0.001	0.005	0.001	0.012
8						

Normalisasi kesejajaran meja, spindle, dll

ON PROGRESS

Background

SUSPECTED LOT DECISION

- 1. NO EXACTLY
 - 2. NO QUICKLY (LONG TIME)
 - 3. HIGH QUANTITY
 - 4. HIGH IRREGULAR COST



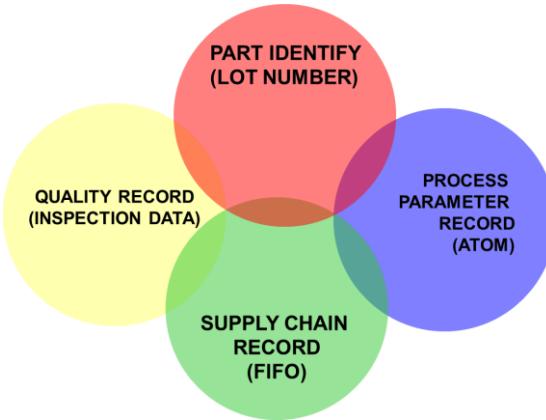
Purpose

SUSPECTED LOT COULD BE DECIDED:

1. EXACTLY
 2. QUICKLY
 3. LITTLE/ SMALL

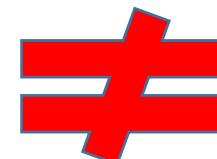


Fundamental Item



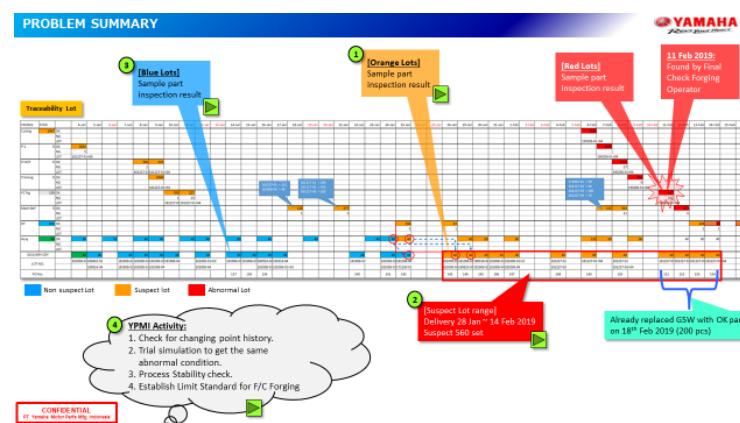
YMC Audit Result → Nov '18

TRACEABILITY for IDN BIG EG Prod PJ				 YAMAHA Kontrol keseluruhan
監査結果 Hesil audit				
問屋で受けた「良品」と「不良」(工場まで)が製品加工(OK)から漏れ出るよ。				
Berusia besar berdasarkan lot produksi yang terjadi dalam masalah. < Tempat proses produksi sampai proses awal	OK	OK	OK	この問題は、良品と不良の間で漏れ出るよ。
【プロセスカード】	BU3 製品品質評価	後取り評価	判定	この問題は、良品と不良の間で漏れ出るよ。
G & A	OK	OK	合格	Terwaktu input produk ・既存の仕様書に記載済 ・既存の仕様書に記載済 ・第一回定期検査実施済
PISTON	NG	OK	改善要請	Tek lengkap penemuan kartu proses base



Cek hanya dilakukan secara sampling dan hanya memastikan ada & tidak saja secara dokumen.

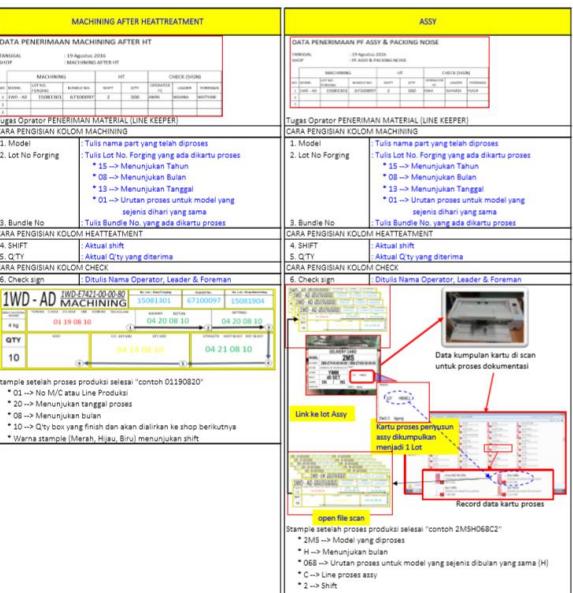
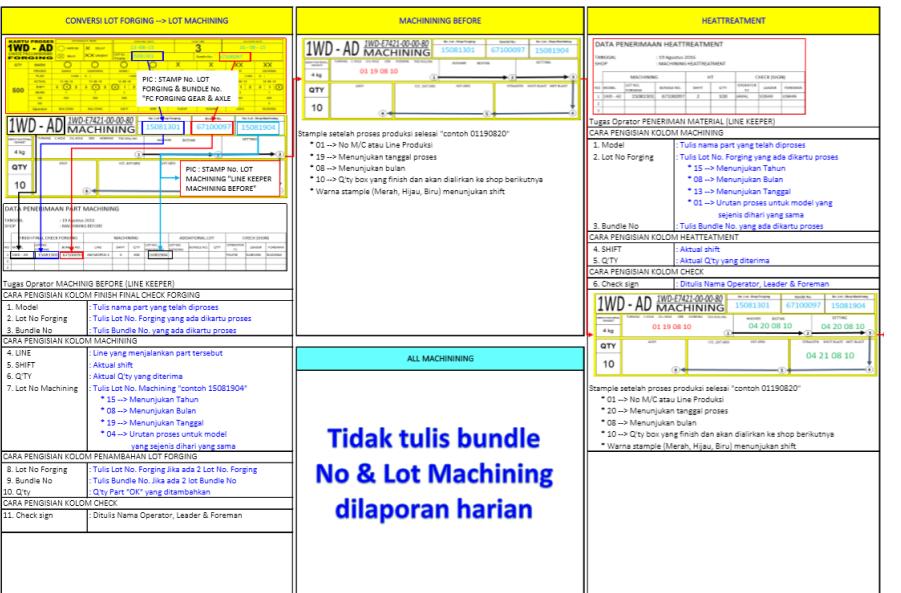
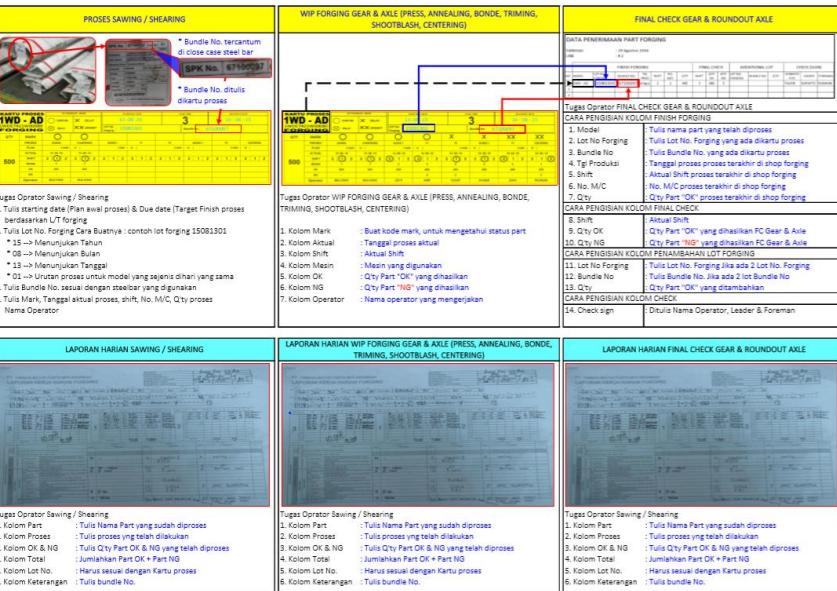
BU3-5W Traceability → Feb '19



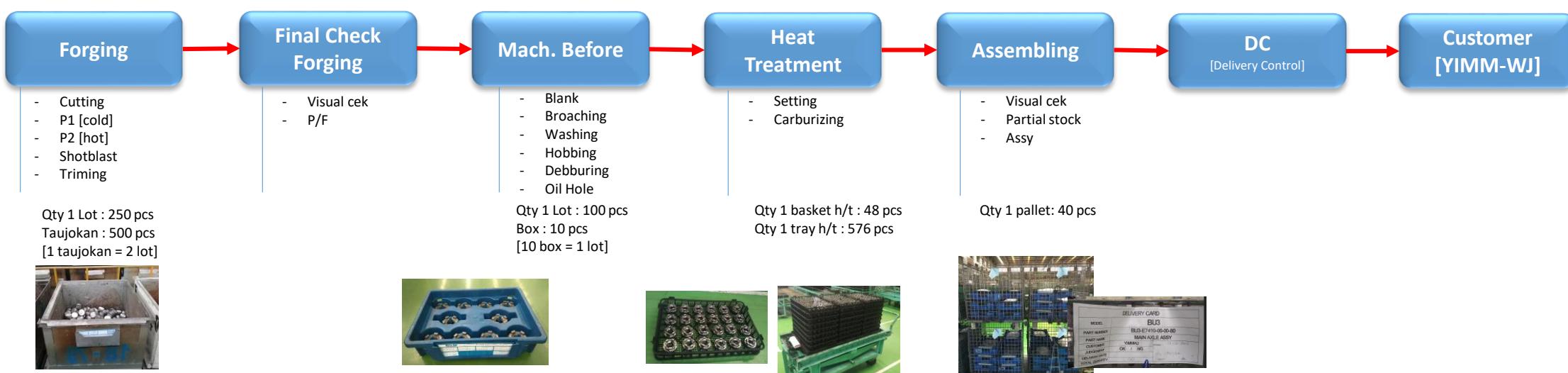
Cek hanya dilakukan secara detail dan bukan hanya memastikan ada & tidak saja secara dokumen, tetapi cek secara detail terhadap isi untuk bisa memastikan Lot suspect.

For Clear Lot
suspect need
+ 2 weeks

Standard



Flow BU3-5W



Resume Problem Traceability

❖ Problem Logistic/ Kartu Proses / Fifo

No	Problem	Lokasi	Picture	Keterangan
1	Jumlah kartu dalam 1 bundle /1 lot assy tidak lengkap standar 4 kartu (1 kartu=10 pcs) aktual hanya ada 3 kartu	Assy		Kartu dalam 1 model ada yang kurang atau lebih
2	Jumlah kartu dalam 1 bundle /1 lot assy jumlah kartu lebih dari standar 4 kartu (1 kartu=10 pcs) aktual lebih ada 5 kartu	Assy		
3	Qty yang tertulis dalam kartu dalam 1 bundle / 1 lot assy kurang dari 40 pcs (kartu 1 =10; kartu 2=10; kartu 3=10; kartu 4=3 pcs) untuk melengkapi qty dalam 1 lot assy (7 pcs) tidak jelas dari lot mana.	Assy		
4	Keterlaluan lot machining dengan catatan assy tidak ada (hanya dibundel saja), ada potensi hilang jejak atau lot tidak sesuai jika lot tersebut hilang	Assy		
5	Fifo kurang baik terutama di line forging (P/F aft bonde/bef press) : barang masuk & barang keluar sama [jika mau ambil part yang dibelakang harus membongkar part / tanjukan yang didepan]	Forging		Part masuk dan pert keluar sama
6	Fifo dari line F/C forging untuk part yang ada 2 konveyor memungkinkan pengambilan/ penyimpanan part tidak urut sesuai no lot, karena belum ada aturan/ kanban cara penyimpanan & cara pengambilan part yang ada 2 atau lebih konveyor bisa menyebabkan pengambilan tidak fifo	Final Check Forging		1 model lebih 3 konveyor
7	Aktivitas data transfer part dari setiap shop sudah berjalan, akan tetapi terdapat ketidaksinkronan jumlah yang di check di Final Cek dengan part yang diterima di machining	Machining H/T	-	

❖ Problem Logistic/ Kartu Proses / Fifo

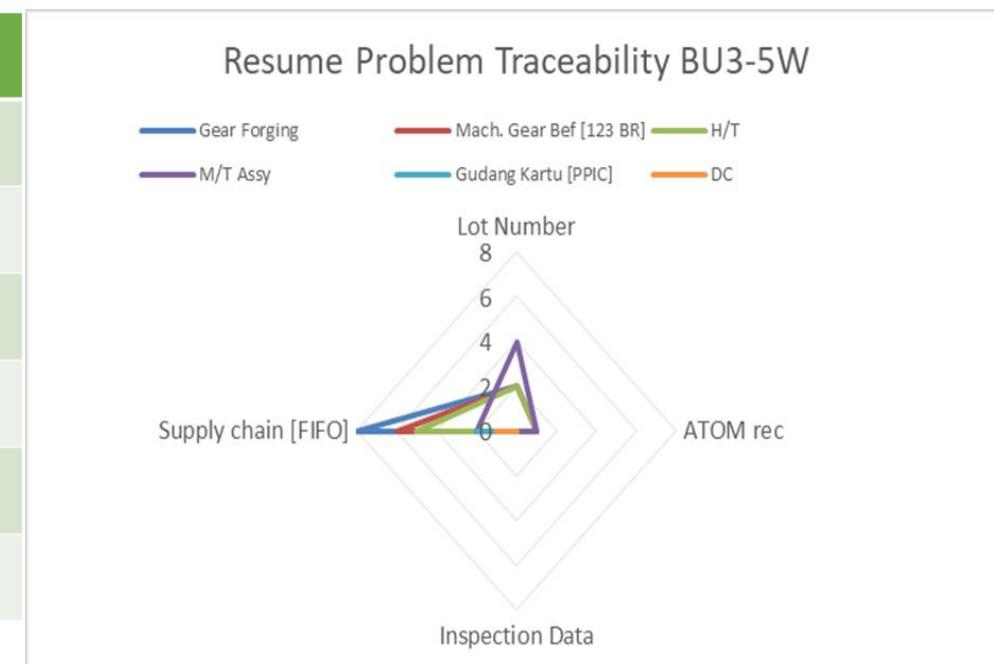
No	Problem	Lokasi	Picture	Keterangan
8	Potensi barang menjadi/tercampur kurang saat transfer ke shop berikutnya : a. Jatuh di proses [terutama di line bonde = setiap kuras terdapat banyak part] b. Part abnormal kembali ke shop sebelumnya untuk repair c. Aktivitas menggantikan qty dalam 1 box disetiap proses d.Saat pengiriman menggunakan troly untuk memudahkan transfer part di susun sembarangan, sehingga saat menyimpan di P/F shop berikutnya menjadi tidak urut e. Pengambilan part untuk trial PE tidak menggunakan data disposal, sehingga jumlah part berkurang / tidak sesuai dengan qty 1 lot	Forging Machining Heat treatment	-	
9	Data part karantina di line forging tidak ada, part abnormal & part trial dalam lokasi yang sama	Forging		
10	Adanya perbedaan jumlah lot & jumlah part per box/ basket di line Forging [1 lot =250, 1 tanjakan=500 pcs], Mach. [1 lot=100, 1 box=10], H/T [1 basket=48 pcs, 1 tray=576 pcs] & Assy [1 lot=40 set]	Forging Machining H/T Assy	-	
11	Pencarian bundel lot assy memakan waktu lama karena file belum di scan karena mesin scan rusak	Gudang kartu [PPIC]		
12	Penyimpanan kartu proses perbundle assy penyimpanan tertumpuk all model sehingga susah mencari	Gudang Kartu [PPIC]		
13	Dalam 1 bundel / 1 lot assy tidak di susun per part contoh : susunan kartu dari atas : BU3-5W, BU3-2P, BU3-AM, BU3-2P, BU3-2P, BU3-5W (tersusun acak)	Assy		
14	Lokasi penyimpanan bundel assy di gudang kartu gedung#4, sementara proses assy di gedung#5, lokasi pencarian jauh	Gudang Kartu [PPIC]	-	
15	Pengiriman di DC tidak fifo, dari data pengiriman lot besar dikirim duluan	DC	-	

❖ Problem Dokumen

No	Problem	Lokasi	Picture	Keterangan
16	Pencarian dokumen untuk mencari jumlah hasil produksi, NG & untuk menemukan Changing Point a.Laporan harian produksi b.Jokken kantri [catatan parameter proses] c.Abnormal record [Laporan harian, laporan antar shift & catatan leader] d.Maintenance Record [LKM = Lembar Kerja Maintenance]	Forging Machining H/T		
17	Detail pengisian laporan harian , a.Jumlah hasil produksi tidak dicatat per berdasarkan no lot proses, menyulitkan trace untuk menghitung jumlah per lot terutama jika produksi lebih dari 1 lot b.Pencatatan no lot tidak lengkap, hanya tulis bagian ujung saja. Kondisi seperti ini menjadi tidak bisa mengetahui jumlah perlot terutama jika produksi lebih dari 1 lot	Forging Machining H/T		Pencatatan no lot forging ditulis bagian ujungnya saja
18	Catatan part NG setting & dandori tidak ada	Forging Machining	-	
19	Penulisan/ stamping urutan no lot di masing masing proses berbeda-beda Sehingga cara baca tanggal proses menjadi lama karena harus Tanya ke masing-masing pic	Forging Machining H/T		

	Lot Number	ATOM rec	Inspection Data	Supply chain (FIFO)
Gear Forging	▲ 2 cases ⑩ ⑯	▲ 1 cases ⑯	●	▲
Mach. Gear Bef [Pack 123 BR]	▲ 2 cases ⑩ ⑯	▲ 1 cases ⑯	-	▲
H/T	▲ 2 cases ⑩ ⑯	▲ 1 cases ⑯	-	▲
M/T Assy	▲ 4 cases ① ② ⑩ ⑯	▲ 1 cases ⑯	-	▲ 2 cases ③ ④
Gudang Kartu [PPIC]	●	-	-	▲ 2 cases ⑪ ⑯
DC	●	-	-	▲ 1 cases ⑯

● Already done
▲ Need improve
✖ Not yet apply



Resume Action for Traceability

❖ Problem Logistic/ Kartu Proses / Fifo

No	Problem	Tindakan	Pic	Mar	Apr	Mei	Jun	Jul	Aug	Sep	Oct	Nov	Des	No	Problem	Tindakan	Pic	Mar	Apr	Mei	Jun	Jul	Aug	Sep	Oct	Nov	Des	
1	Jumlah kartu dalam 1 bundle / 1 lot assy tidak lengkap standar 4 kartu (1 kartu=10 pcs) aktual hanya ada 3 kartu	Dilakukan pencatatan setiap lot assy dalam sheet dan dibuatkan standard cara penggantian / memenuhi lot yang kurang	Bp.Saptono & Bp. Slamet R.	➡										16	Pencarian dokumen untuk mencari jumlah hasil produksi, NG & untuk menemukan Changing Point a.Laporan harian produksi	Setiap perubahan / abnormal di lakukan pencatatan	ALL Foreman & GF Produksi	➡										
2	Jumlah kartu dalam 1 bundle / 1 lot assy jumlah kartu lebih dari standar 4 kartu (1 kartu=10 pcs) aktual hanya ada 5 kartu			➡										16	b.Jokken kantri [catatan parameter proses] c.Anormal record [Laporan harian, laporan antar shift & catatan leader] d.Maintenance Record [LKM = Lembar Kerja Maintenance]													
3	Qty yang tertulis dalam kartu dalam 1 bundle / 1 lot assy kurang dari 40 pcs (kartu 1 =10; kartu 2 =10; kartu 3 = 10; kartu 4 =3 pcs) untuk melengkapi qty dalam 1 lot assy (7 pcs) tidak jelas dari lot mana.													17	Detail pengisian laporan harian , a.Jumlah hasil produksi tidak dicatat per berdasarkan no lot proses, menyulitkan trace untuk menghitung jumlah per lot terutama jika produksi lebih dari 1 lot b.Pencatatan no lot tidak lengkap, hanya tulis bagian ujung saja. Kondisi seperti ini menjadi tidak bisa mengetahui jumlah perlot terutama saat ada lot yang sama nomor ujungnya akan tetapi no depannya berbeda, Kondisi seperti ini salah satu yang membuat tidak singkronnya jumlah hasil produksi	Buat standar pengisian check sheet, edukasi & control pelaksanaannya	ALL Foreman & GF Produksi	➡										
4	Keterkaitan lot machining dengan catatan assy tidak ada (hanya dibundel saja), ada potensi hilang jejak atau lot tidak sesuai jika lot tercecer/ hilang													18	Catatan part NG setting & dandori tidak ada	Masukan semua NG setting, dandori, dll	ALL Foreman & GF Produksi	➡										
5	Fifo kurang baik terutama di line forging (P/F aft bonde/ bef press) : barang masuk & barang keluar sama (jika mau ambil part yang dibelakang harus membongkar part / tanjoukan yang didepan	Improvement tempat penyimpanan untuk memudahkan fifo	Bp. Mulyono & Bp. Yusuf MY	➡										19	Penulisan/ stamping urutan no lot di masing masing proses berbeda-beda, Sehingga cara baca tanggal proses menjadi lama karena harus Tanya ke masing-masing pic	Standarisasi penulisan / stamping no lot di semua proses	Bp. Inggi [PPIC]	➡										
6	Fifo dari line F/C forging untuk part yang ada 2 konveyor memungkinkan pengambilan/ penyimpanan part tidak urut sesuai no lot, karena belum ada aturan/ kanban cara penyimpanan & cara pengambilan part yang ada 2 atau lebih konveyor yang bisa menyebabkan pengambilan tidak fifo	Dibuatkan standard cara penyimpanan & pengambilan part untuk part konveyor disimpan di lebih dari 2 konveyor & buat tag visualisasi	Bp. Mulyono & Bp. Ruswan	➡																								
7	Aktivitas data transfer part dari setiap shop sudah berjalan, akan tetapi terdapat ketidaksikronan jumlah yang di check di Final Cek dengan part yang diterima di machining	Standarisasi cara pengisian laporan, edukasi pic yang membuat laporan control pelaksanaan	ALL Foreman & GF Produksi	➡																								
8	Potensi barang menjadi/tercampur kurang saat transfer ke shop berikutnya : a. Jatuh di proses [terutama di line bonde = setiap kuras terdapat banyak part] b. Part abnormal kembali ke shop sebelumnya untuk repair c. Aktivitas menggenapkan qty dalam 1 box disetiap proses d.Saat pengiriman menggunakan troly untuk memudahkan transfer part di susun sembarang, sehingga saat menyimpan di P/F shop berikutnya menjadi tidak urut e. Pengambilan part untuk trial PE tidak menggunakan data disposal, sehingga jumlah part berkurang / tidak sesuai dengan qty 1 lot	Standarisasi penanganan part jatuh dalam mesin, abnormal, pengiriman & trial	Bp. Inggi [PPIC]	➡																								
9	Data part karantina di line forging tidak ada, part abnormal & part trial dalam lokasi yang sama	Buatkan list karantina [In-Out part jelas]	Bp. Mulyono Bp.Yusuf MY	➡																								
10	Adanya perbedaan jumlah lot & jumlah part per box/ basket di line Forging[1 lot =250, 1 tanjokan=500 pcs], Mach.[1 lot=100, 1 box=10], H/T [1 basket=48 pcs, 1 tray=576 pcs] & Assy [1 lot=40 set]	Review & standarisasi	Bp. Inggi [PPIC]	➡																								
11	Pencarian bundel lot assy memakan waktu lama karena file belum di scan karena mesin scan rusak	Perbaikan penyimpanan dengan menyusun kartu proses	Bp. Inggi [PPIC]	➡																								
12	Penyimpanan karty proses perbundel assy penyimpanan tertumpuk all model sehingga susah mencari			➡																								
13	Dalam 1 bundel / 1 lot assy tidak di susun per part contoh : susunan kartu dari atas : BU3-5W, BU3-2P, BU3-AM, BU3-2P, BU3-2P, BU3-5W (tersusun acak)			➡																								
14	Lokasi penyimpanan bundel assy di gedung kartu gedung#4, sementara proses assy di gedung#5, lokasi pencarian jauh			➡																								
15	Pengiriman di DC tidak fifo, dari data pengiriman lot besar dikirim duluan	Kirim fifo sesuai urutan lot, jika lot tidak bisa fifo beri keterangan	BML	➡																								

Next Activity : Study for use QR code Marking



Target → Minimal for Assy Parts