

van 3 uur naar

20 minuten omsteltijd

Klaas van Duin



30/31 MEI & 1 JUNI 2017
JAARBEURS UTRECHT

ELECTRONICS
& APPLICATIONS
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introducing



Klaas van Duin

manager production technology

e kvduin@tbp.nl

t +31 187 602744

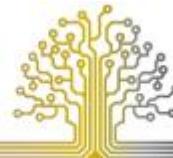


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the business of perfection

- EMS, production of electronics for third parties (B2B)
- development, early supplier involvement,
test engineering, assembly, testing and box building
- responsible for complete supply chain
- high-tech, high mix, low volume



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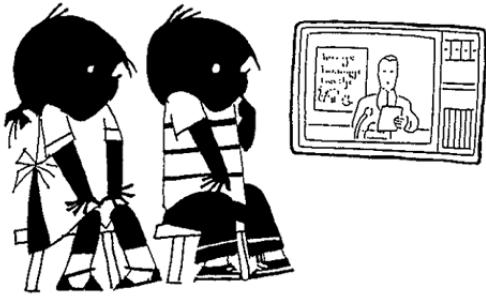
the business of perfection

- turnover € 30 million
- locations 2
- employees 120
- customers 50+
- floor space 8.000 m²
- ISO 9001:2008, AQAP 2120:2009, ISO14001
- ISO13485 medical Q2 2017

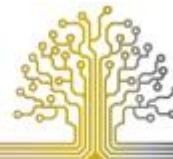
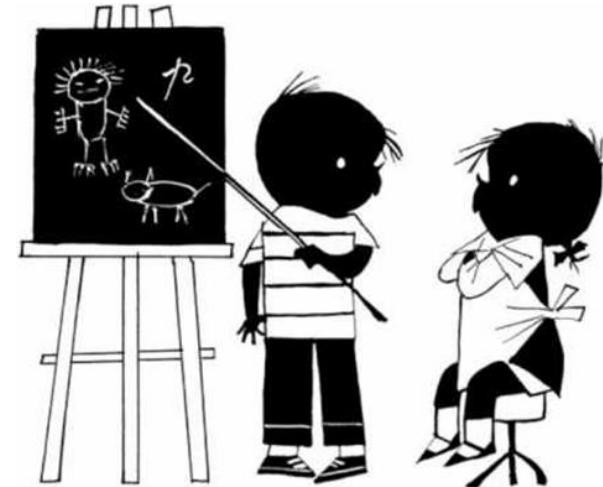


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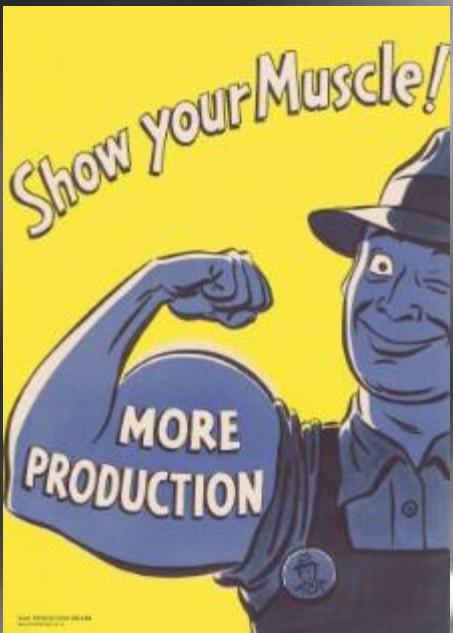
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niet te ingewikkeld,
Jip en Janneke taal...

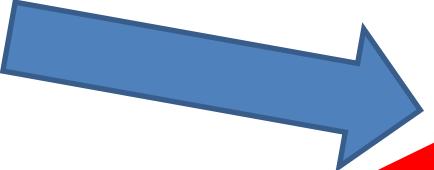


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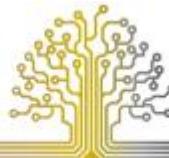




vandaag



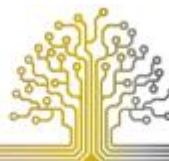
snellere machine staat sneller stil!!!



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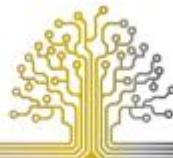
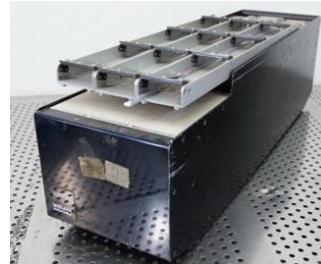


slim spul nodig....



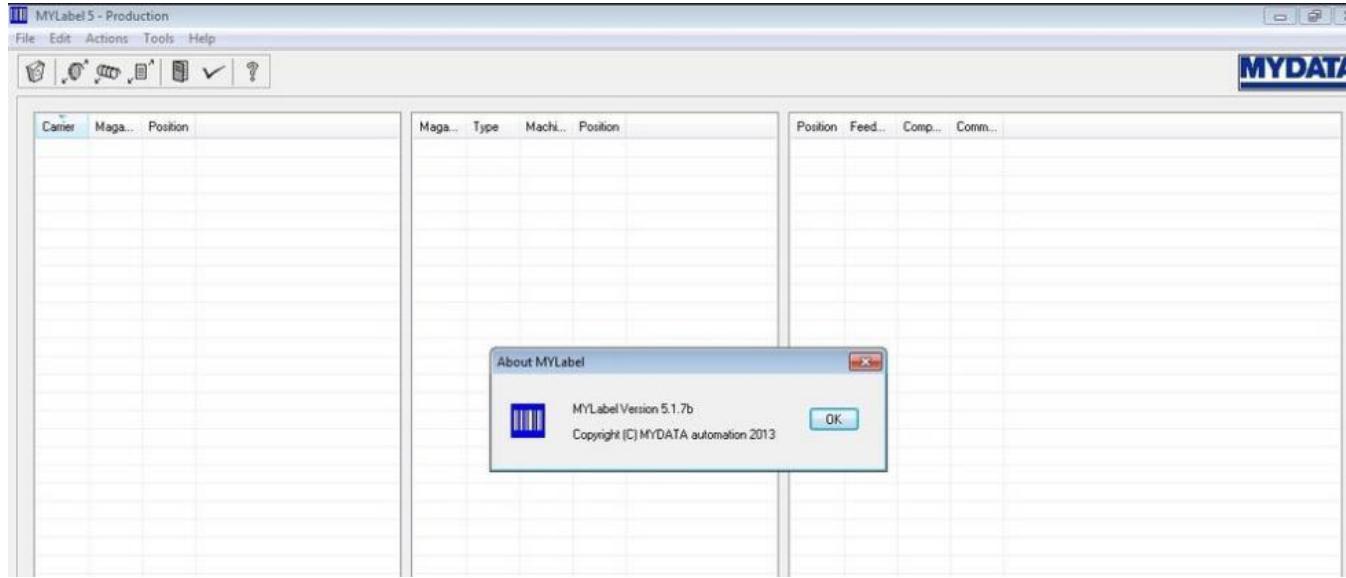
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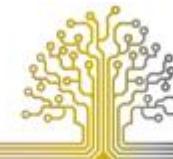
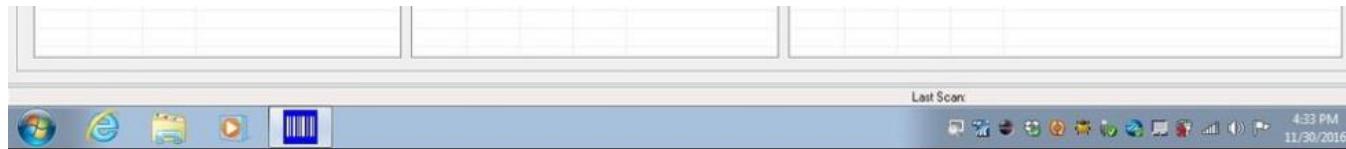


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... en niet zo slimme software...



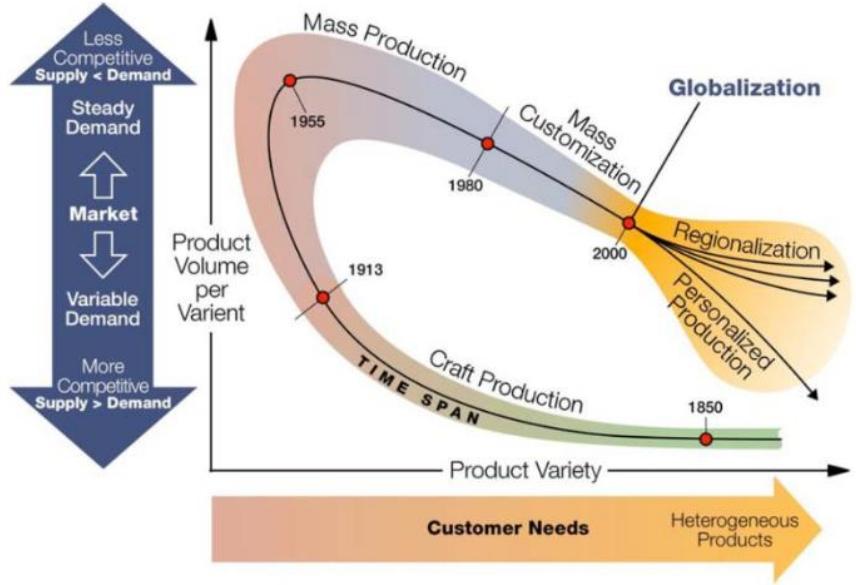
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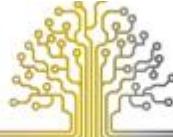
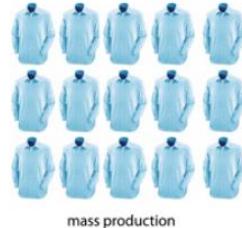


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VS.



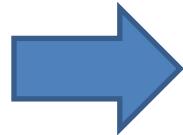
A screenshot of the Nike website showing a color customization interface for a sneaker. The sneaker is displayed with a color palette titled "NIKE AIR MAX 90 NM EMID \$175". The palette includes options for "MUDGUARD LOGO" and "NIKE AIR MAX PRINT". A color swatch for "NIKE AIR MAX PRINT" is shown with a green checkmark. The interface includes "PREV" and "NEXT" buttons, and an "ADD TO CART" button.



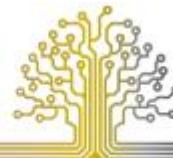
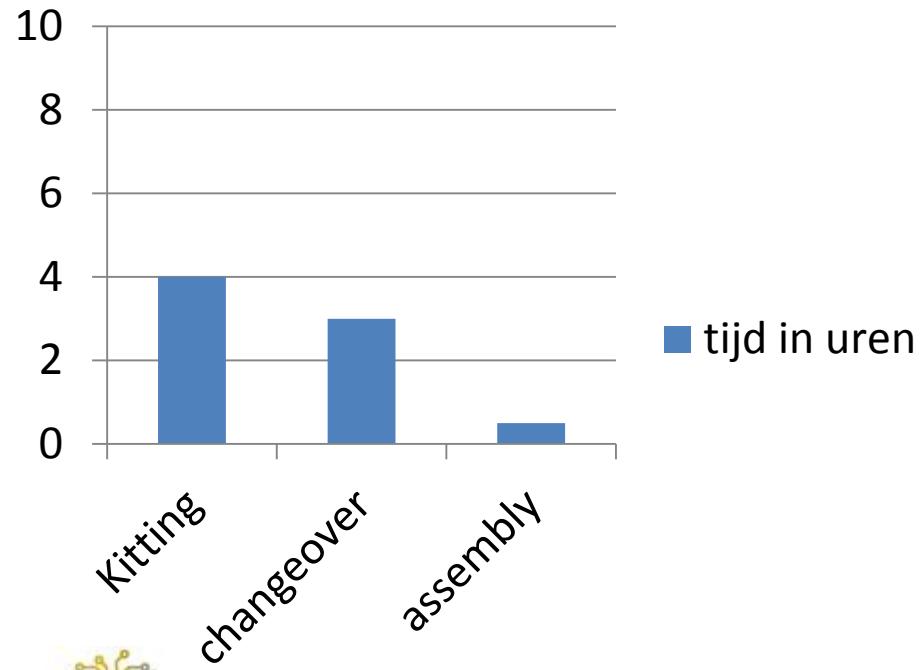
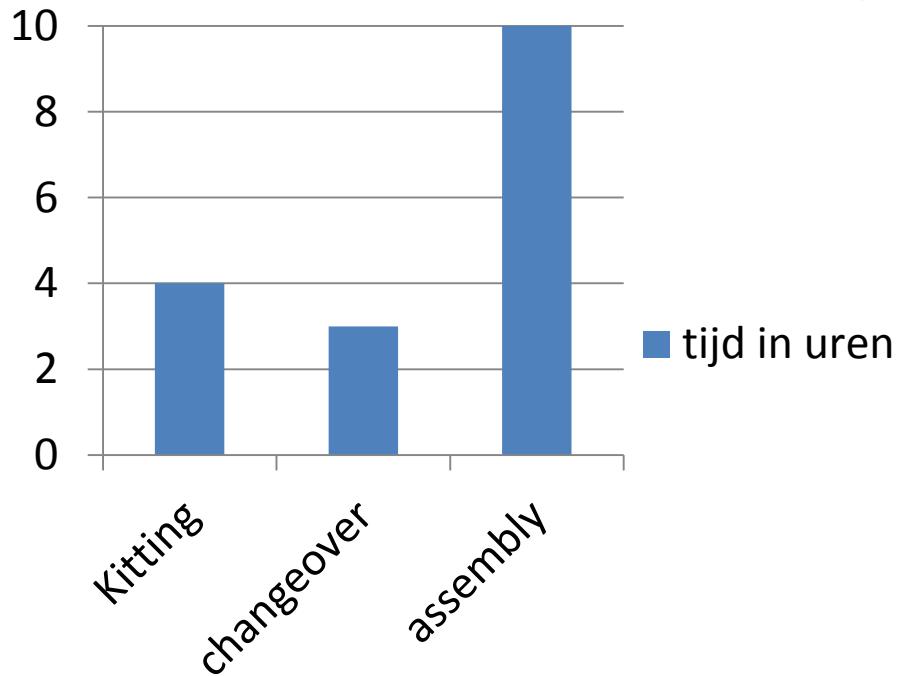
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oude situatie 100 stuks

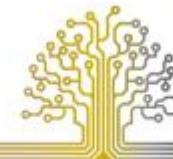
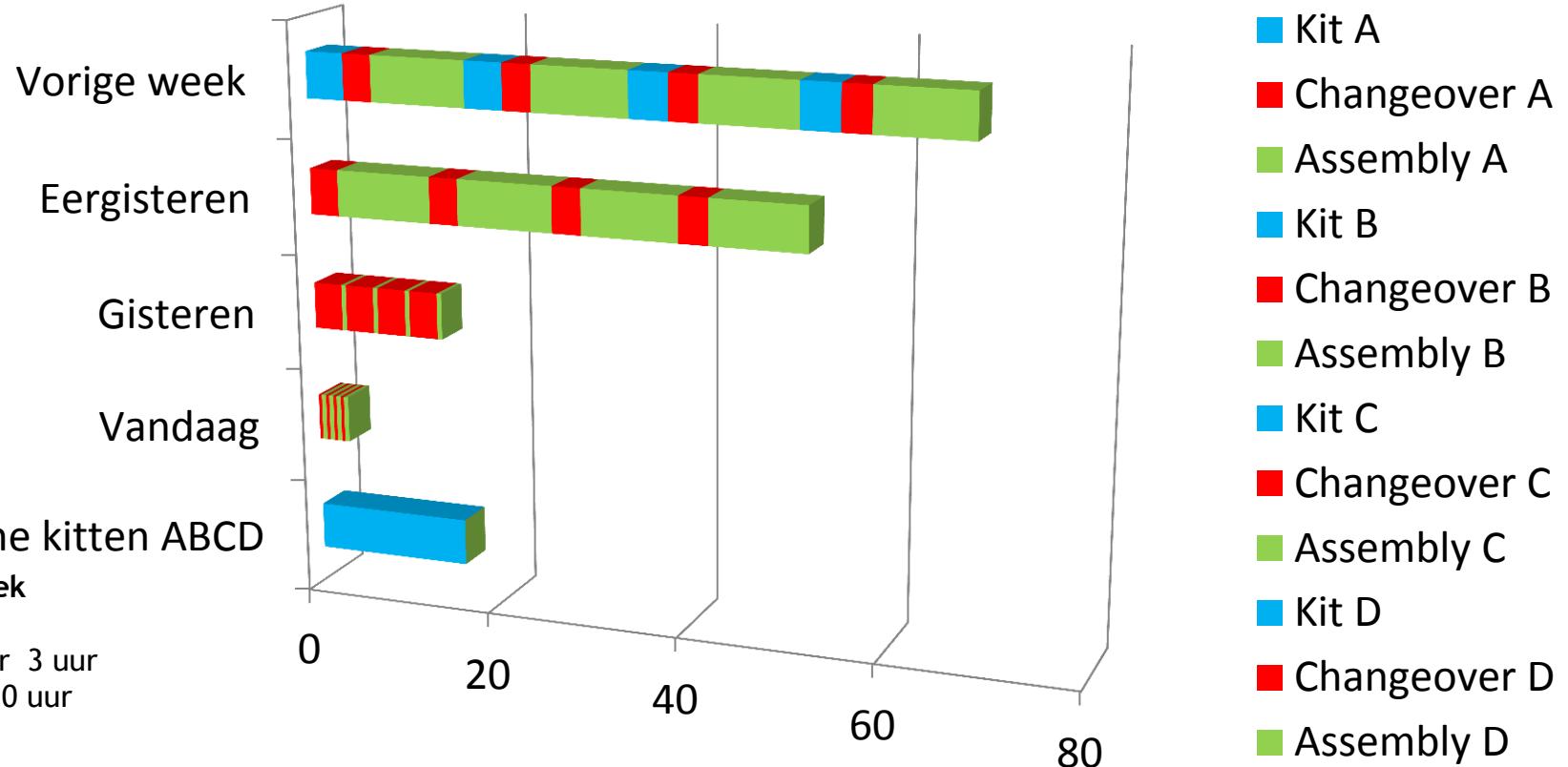


nieuwe situatie 5 stuks



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van uren naar minuten

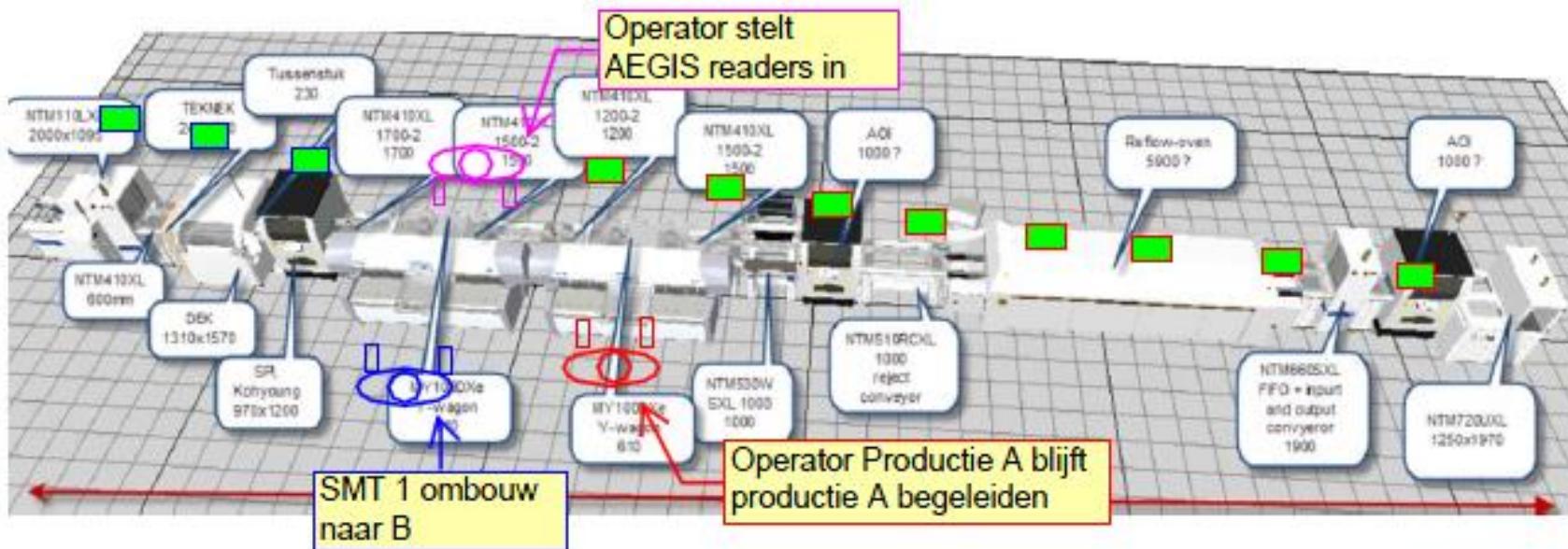


ombouw is een team effort



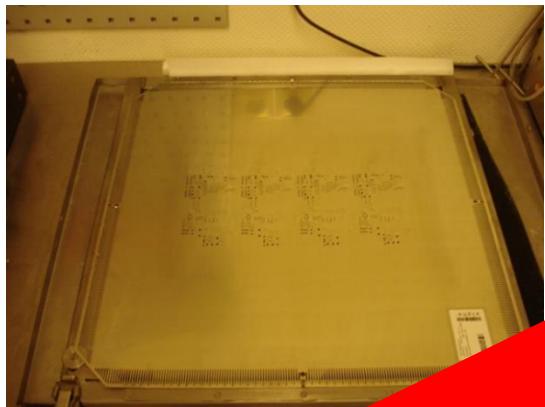
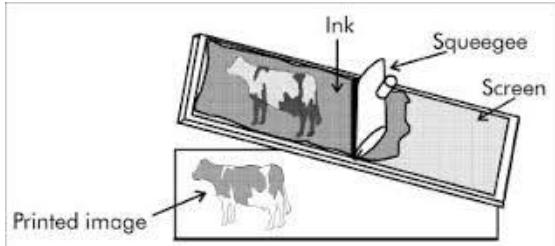
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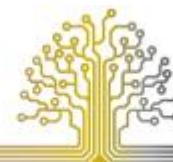
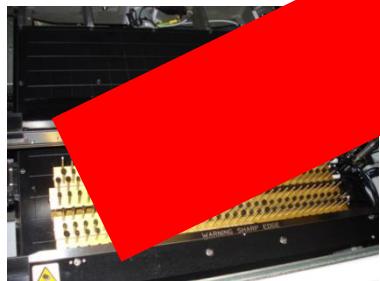
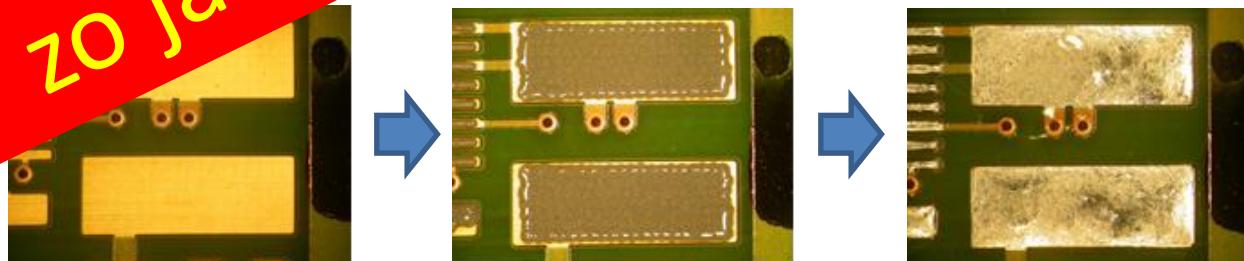


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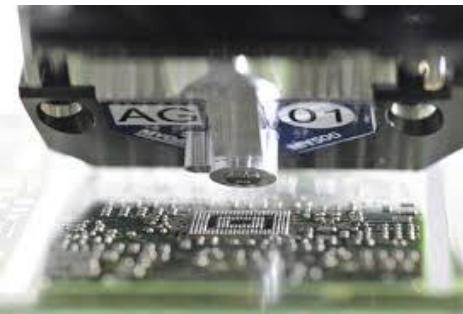
zeefdrukken



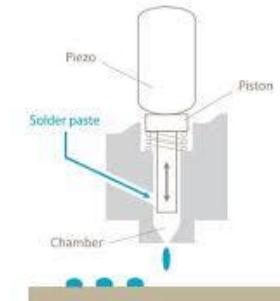
d.m.v.
zo jaren 80...
printen



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jetten



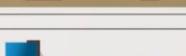
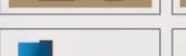
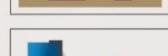
printen net als thuis, kop spuugt pasta op pcb

COMMON ISSUES WITH SCREEN PRINTING

THICK STENCIL
Optimized for large components.

THIN STENCIL
Optimized for small components.

STEPPED STENCIL
Require a larger board area.

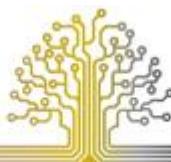
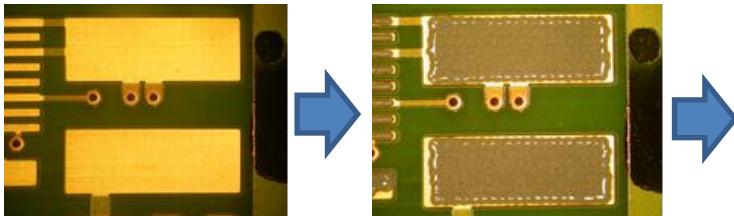


SOLVED WITH JET PRINTING

Each component get the right amount of solder paste.



ALWAYS PERFECT JOINTS



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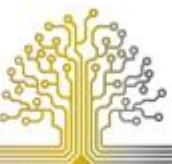
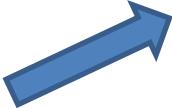
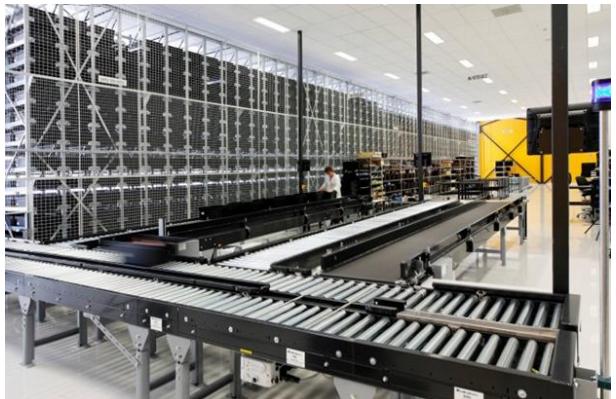
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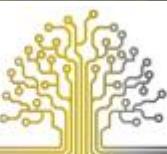
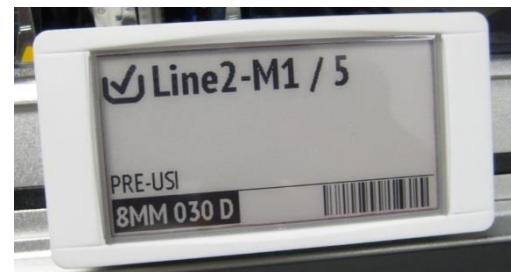
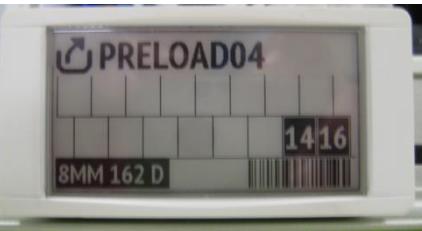
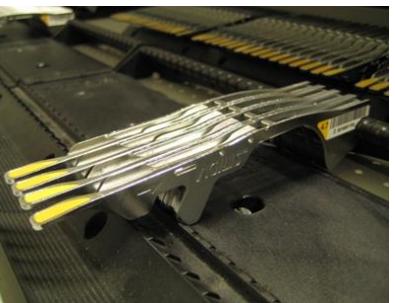


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MYCenter

File Edit View Customer Tools Help

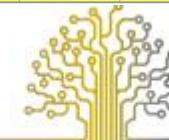
Kits Barcode loading Carriers Containers

Converters Editors Magazines Loading Viewers

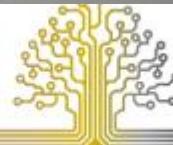
ZZ1801001000055
SMD.WEERST..1K00.1%0402.....8MM.T
001 - Preloads shelved > PRS 103 > 8MM 030 D/1 > AF 0033580815 > 11000823432
1308 (required 3840)
PRE-USI

Drag a column header here to group by that column

Loading status	Provide status	Component	Require...	Posit...	Magazine	Carrier	Location
Kitted	Provided	ZZ1801001000055	3840	1	8MM 030 D	11000823432	001 - Preloads shelved > PRS 103 > 8MM 030 D/1 > AF 0033580815 > 11000823432
Kitted / Not strict	Not provided	ZZ2900104075847	4032	2	8MM 030 D	11000830918	001 - Preloads shelved > PRS 103 > 8MM 030 D/2 > AF 0033580815 > 11000823432
Kitted	Provided	ZZ1802211100055	12672	3	8MM 030 D	11000822178	001 - Preloads shelved > PRS 103 > 8MM 030 D/3 > AF 0033580815 > 11000823432
Kitted	Provided	ZZ3880080946482	96	4	8MM 030 D	11000829140	001 - Preloads shelved > PRS 103 > 8MM 030 D/4 > AF 0033580815 > 11000823432
Kitted	Provided	SM54700927A	96	5	8MM 030 D	11000821602	001 - Preloads shelved > PRS 103 > 8MM 030 D/5 > AF 0033580815 > 11000823432
Kitted / Not strict	Not provided	SM54700725	96	6	8MM 030 D	11000823662	No
Kitted / Not strict	Provided	ZZ184100300055	384	7	8MM 030 D	11000823662	No
Kitted / Not strict	Not provided	SM54700411	384	8	8MM 030 D	11000823662	No
Kitted	Not provided	SM54400432	96	9	8MM 030 D	11000823662	No
Unloaded	Not provided	ZZ180102000055	20448	11	8MM 030 D	11000823662	No
Kitted	Not provided	ZZ1804321100000	2304	12	8MM 030 D	11000823662	No
Kitted	Provided	ZZ2900471075847	192	13	8MM 030 D	11000823662	No
Kitted	Not provided	SM54700311	0	14	8MM 030 D	11000823662	No
Kitted / Not strict	Not in SMD Tower	SM54700801	0	15	8MM 030 D	11000823662	No
Kitted / Not strict	Provided	SM54700954	0	16	8MM 030 D	11000823662	No
Kitted / Not strict	Provided	SM54700954	0	17	8MM 030 D	11000823662	No
Kitted / Not strict	Provided	SM54700954	0	18	8MM 030 D	11000823662	No
Kitted	Not provided	SM54700306	0	19	8MM 030 D	11000823662	No
Unloaded	Provided	ZZ1802211100055	12672	20	8MM 004 oud	11000818808	Tower 1
Unloaded	Provided	ZZ1802211100055	12672	21	12/16MM 004 oud	11000816211	Tower 1
Unloaded	Provided	ZZ1802211100055	12672	22	12/16MM 004 oud	11000837753	Tower 1
Kitted / Not strict	Not provided	102-ASM10	96	23	102-ASM10	31000831201	000 - Climateroom > 102-ASM10/5
Kitted / Not strict	Not provided	102-ASM10	96	24	102-ASM10	31000833108	000 - Climateroom > 102-ASM10/3
Kitted	Not provided	101-ASM10	96	25	101-ASM10	31000836069	000 - Climateroom > 101-ASM10/15

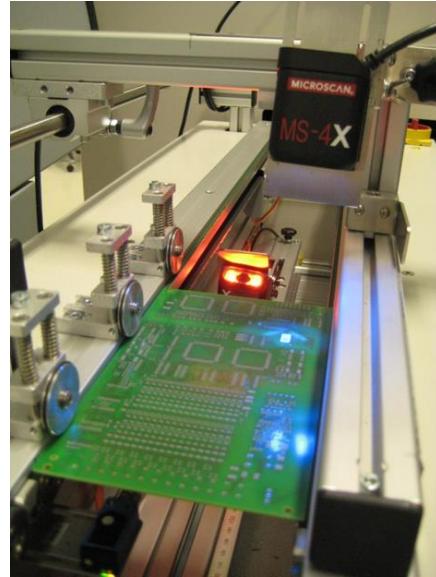


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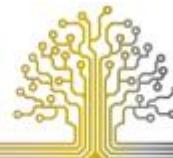
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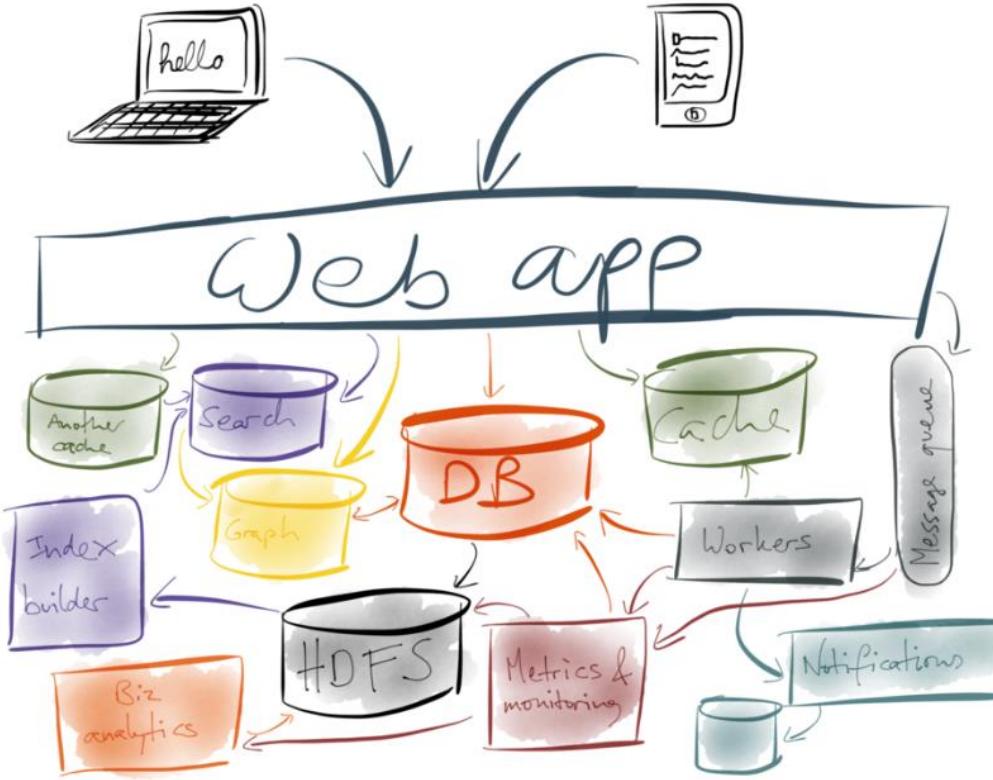
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SOFTWARE

the business
tbp
electronics
of perfection



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tbp electronics b.v.

Mycronic Machine performance monitor

Line 1 quantity: 2 of 50 | expected: 12:49 11-04 | 1834433-TOP-V002 | 2592331

Machine 1	Time	Machine 2	Time
my100-14n0504	-543 seconds	my100-14n0505	-1896 seconds

Line 2 quantity: 50 of 50 | expected: 12:30 10-04 | 1834246-TOP-V004 | 2590860

Machine 1	Time	Machine 2	Time
my100-14n0470	16 minutes 28 seconds	my100-14n0469	3 minutes 23 seconds

Line 3 quantity: 52 of 96 | expected: 13:51 10-04 | 1891189-BOT-V001 | 2595213

Links	Time
my19n203	12 minutes 40 seconds

Line 4 quantity: 20 of 20 | expected: 09:42 10-04 | 1834280T-V001 | 2576900

Rechts	Time
my19n204	3:01 hours

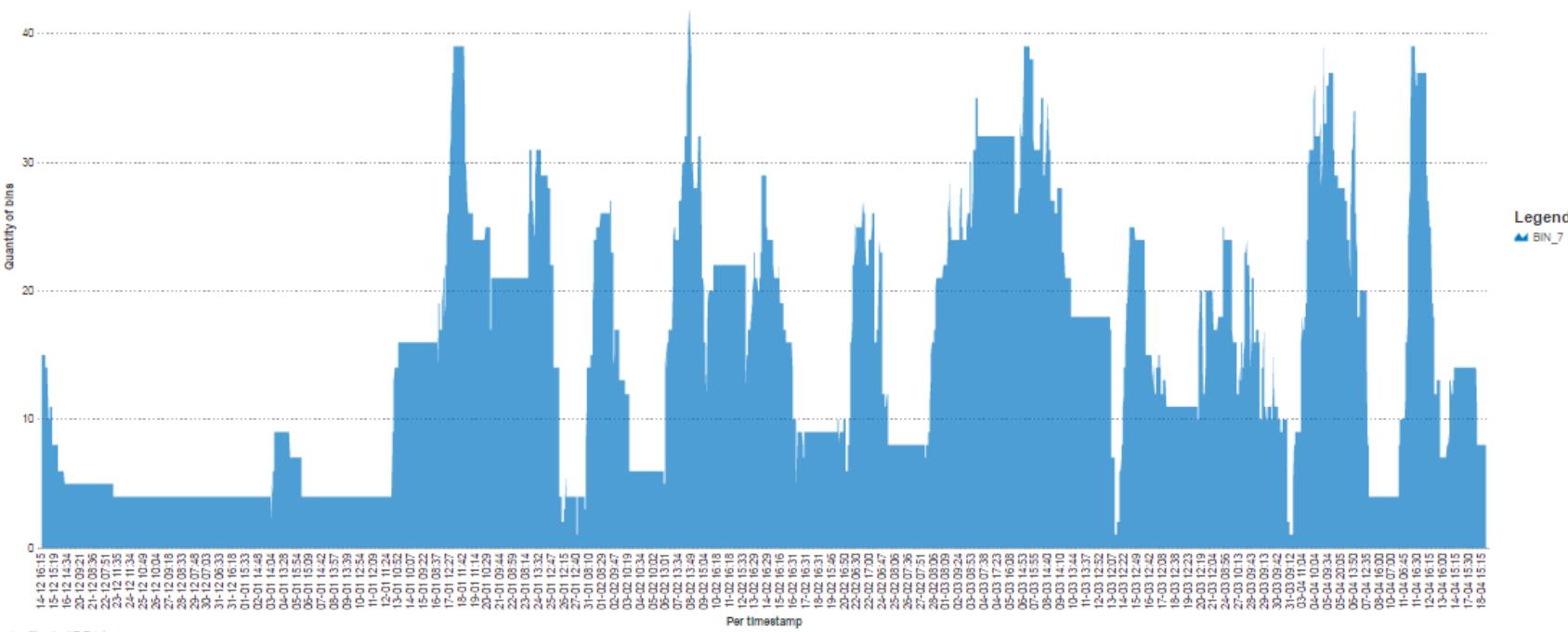


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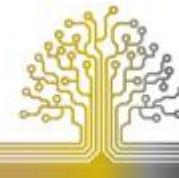
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Myinventory

Results of Feedertype BIN_7



Fusion Charts XT Trial



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Modelpoint my100-14n0504

Results between 2017-03-20 06:00:00 and 2017-03-20 23:55:00

Sec 3000

Sec 2400

Sec 1800

Sec 1200

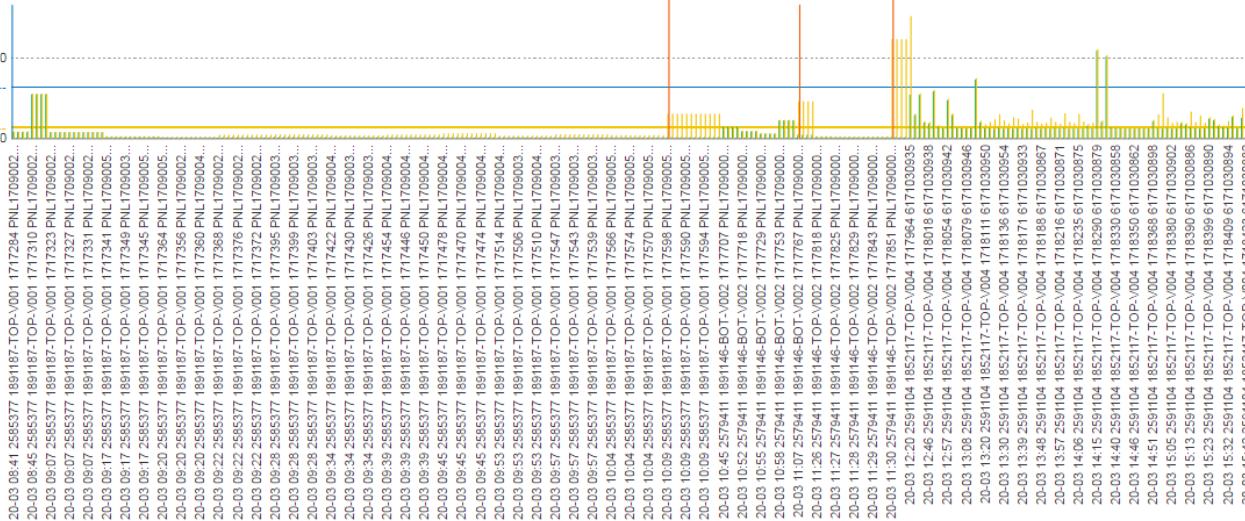
Sec 600

Sec 0

Time in Seconds

5 minutes higher then assemblytime

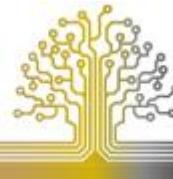
84 sec Minimum assemblytime



Legend

- tijd begonnen, tijd geëindigd
- start stop time per pcb
- start start time per pcb
- changeover(s)

FusionCharts XT Trial



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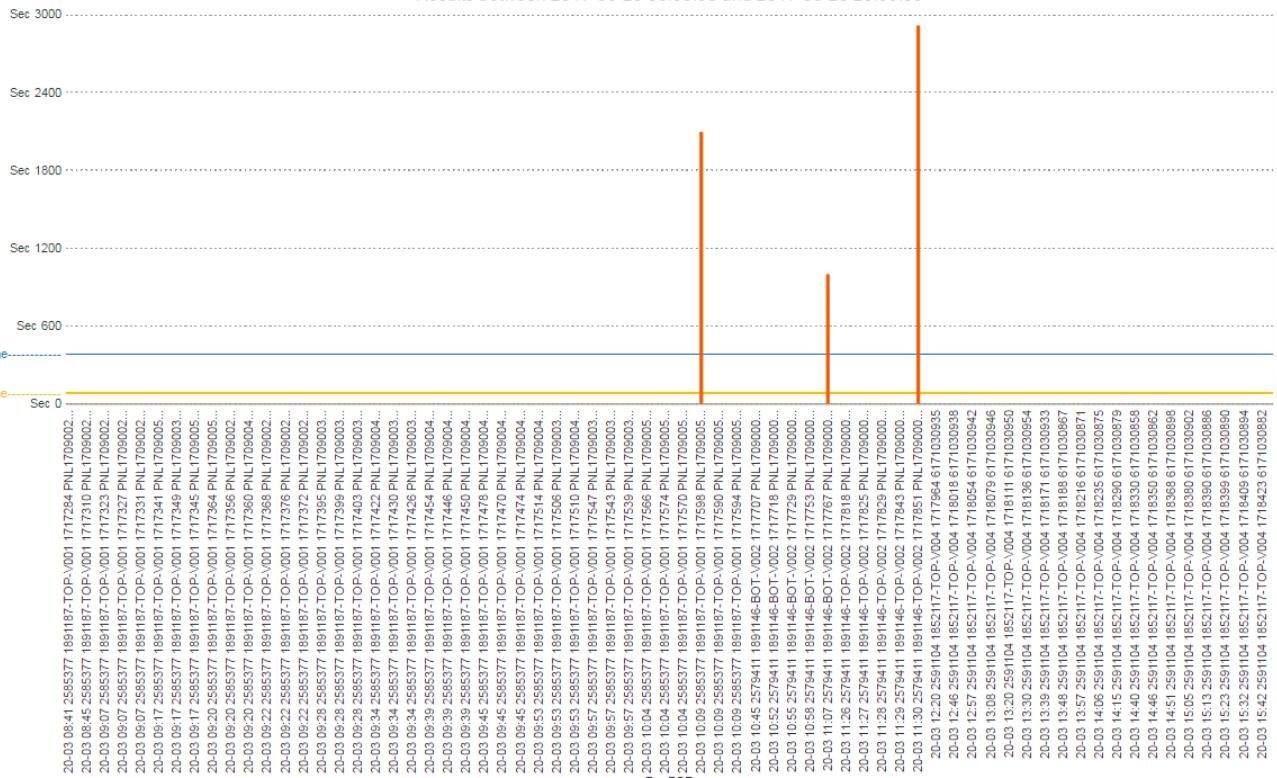
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Modelpoint my100-14n0504

Results between 2017-03-20 06:00:00 and 2017-03-20 23:55:00

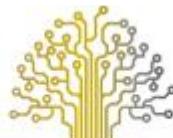
Time in Seconds



Legend

- tijd begonnen, tijd geëindigd
- start stop time per pcb
- start start time per pcb
- changeover(s)

FusionCharts XT Trial



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Modelpoint my100-14n0504

Results between 2017-03-20 06:00:00 and 2017-03-20 23:55:00

Sec 3000

Sec 2400

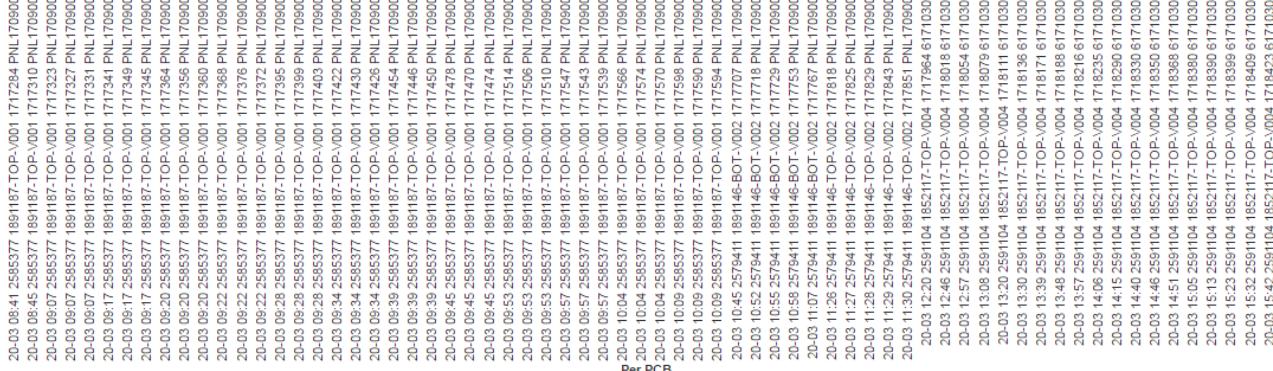
Sec 1800

Sec 1200

Sec 600

Sec 0

Time in Seconds

5 minutes higher then assembly-time
84 sec Minimum assembly-time

Legend

- tijd begonnen, tijd geëindigd
- start stop time per pcb
- start start time per pcb
- changeover(s)



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Reden Stilstaan?

Serienummer:
Machine
Project
stilstaan seconden.

Wat was de reden?

- Materiaal te kort
- Storing van Machine
- Omstellen
- 1e Board controle
- Fout programma
- Onderhoud
- Print schoonmaken
- Aegis

Wat was er precies aan de hand?

Verzenden

Barcode	Seconds Of Stop	Reason	Description
6163540174	4457	Storing van Machine	storing van machi 2,2
6163540151	894	1e Board controle	1e board controle
6163540173	1288	Anders	scanner piept vaak
6163540170	929	Anders	componenten in de tray lagen niet goed package probleem
6163540167	1193	Materiaal te kort	tex is leeg
6163540152	751	Storing van Machine	H 04 is kapot
6163540084	976	Anders	jetprogramma test
6163540092	757	Materiaal te kort	trays bijvullen
6163540102	650	Storing van Machine	feerder storingen
6163540104	644	Materiaal te kort	Trays bijvullen
6163540109	972	Storing van Machine	MACHINE CRASHD
6163540112	685	Materiaal te kort	ROL VERVANGEN
6163540114	426	Storing van Machine	geen
6163540004	2538	1e Board controle	Test met 1 board jetter versie 4
6163540149	1999	1e Board controle	Nog steeds testen met de jetter!
6163540145	1859	1e Board controle	Test met jetter, inmiddels revisie 7 !
6163540141	751	1e Board controle	Jetter test!
6163540138	1274	Aegis	..
6163540007	678	Materiaal te kort	boarden te kort vanwege aanpassingen Kohyoung
6163540052	1154	Anders	kophyoug aanpassen
6163540048	648	Anders	Nog steeds jet problemen, nu vertraging wegens Jacob / Kurt



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Wat doet deze functie? Deze functie laat de redenen per categorie van de smt per datum zien.

De tijd is in minuten en secondes aangegeven en is vanaf het moment dat de machine(s) er langer over gedaan hebben als historische tijd aangeeft.

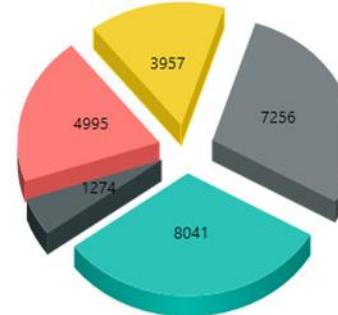
Reasons of 2017/04/10

10 | 04 | 2017 | Get Reasons

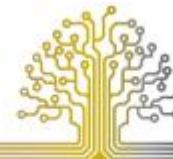
Amount	Category	Time	Last inserted
11 x	Anders	3:01 hours	2017-04-10 14:04:46.093
4 x	Changeover	2:44 hours	2017-04-10 14:13:28.953
2 x	1e Board controle	13 minutes	2017-04-10 10:40:49.097
1 x	Storing van Machine	20 minutes	2017-04-10 11:32:21.320



Redenen waarom langer over de productie is gedaan



- 1e Board controle
- Aegis
- Anders
- Materiaal te kort
- Storing van Machine



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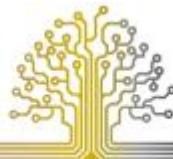
stand 7E072

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