Wiegand-Glas Experiences with XPAR

IR-D / Gobassist

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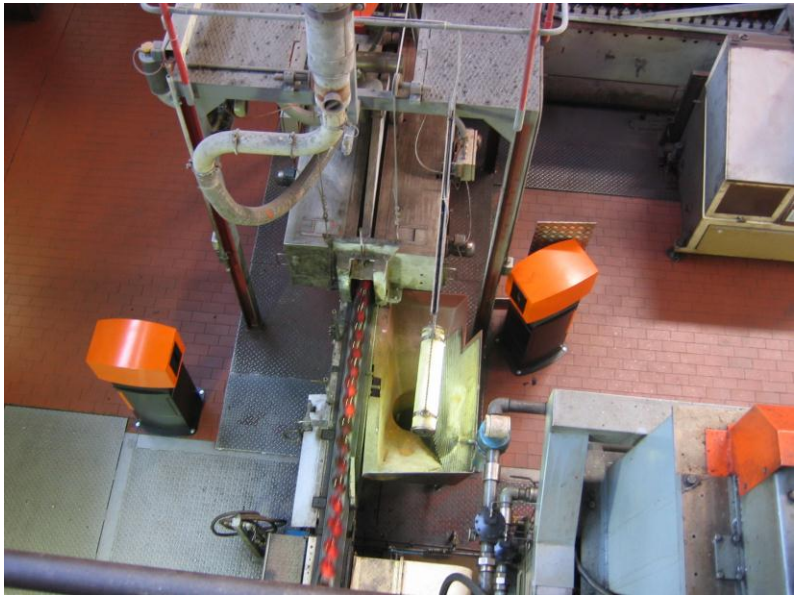
History with XPAR Infrared- and Gob-Assist Systems at Wiegand-Glas

- First Contact with XPAR at Glasstec 2000
- 2001 Installation of the first IR-21 System
- 2002 Installation of 2nd IR-21 System
- 2005 First Polysigma System
- 2008 Installation of the first IR-D
- Since 2012 all 14 lines in both Wiegand plants are equiped with IR-D Systems



- Since 2011 we have one Gob-Assist System installed at a EMHART 12 Section NIS TG Line

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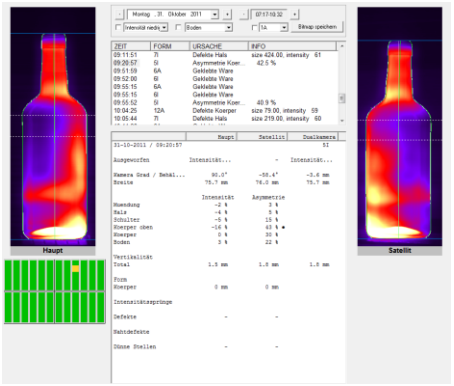
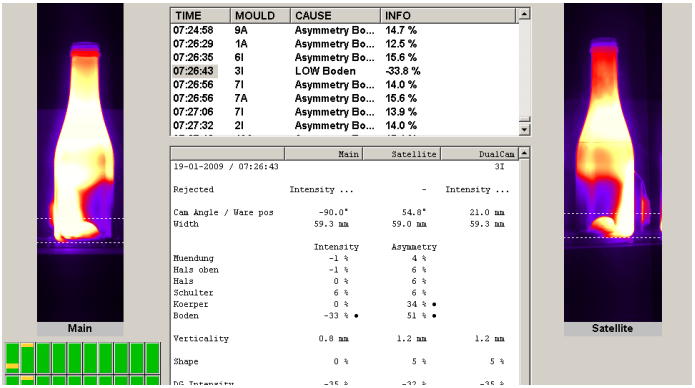
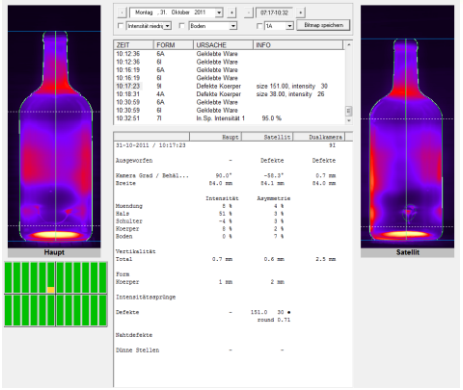
IR-D Reject Options some Examples

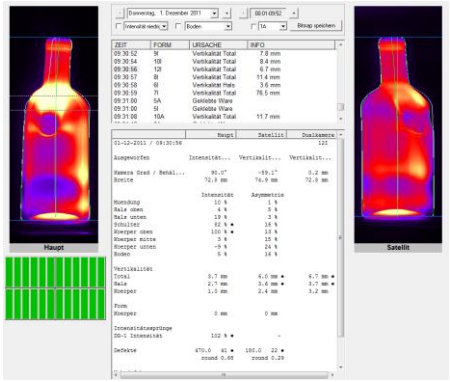


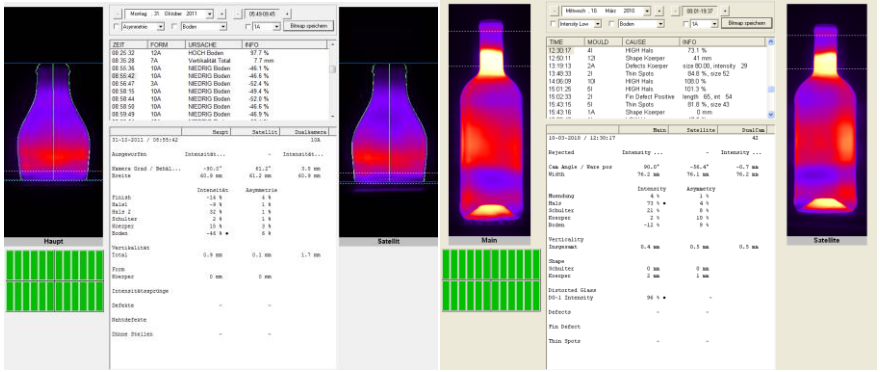


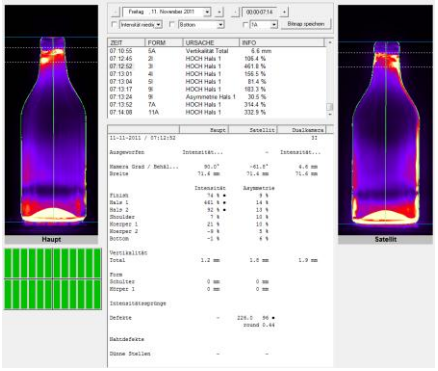
TIME	MOULD	CAUSE	INFO
07:24:58	9A	Asymmetry Bo...	14.7 %
07:26:29	1A	Asymmetry Bo...	12.5 %
07:26:35	6I	Asymmetry Bo...	15.6 %
07:26:43	3I	LOW Boden	-33.8 %
07:26:56	7I	Asymmetry Bo...	14.0 %
07:26:56	7A	Asymmetry Bo...	15.6 %
07:27:06	7I	Asymmetry Bo...	13.9 %
07:27:32	2I	Asymmetry Bo...	14.0 %

	Main	Satellite	DualCam
19-01-2009 / 07:26:43			3I
Rejected	Intensity ...	-	Intensity ...
Cam Angle / Ware pos	-90.0°	54.8°	21.0 mm
Width	59.3 mm	59.0 mm	59.3 mm
	Intensity	Asymmetry	
Muendung	-1 %	4 %	
Hals oben	-1 %	6 %	
Hals	0 %	6 %	
Schulter	6 %	6 %	
Koerper	0 %	34 % ●	
Boden	-33 % ●	51 % ●	
Verticality	0.8 mm	1.2 mm	1.2 mm
Shape	0 %	5 %	5 %









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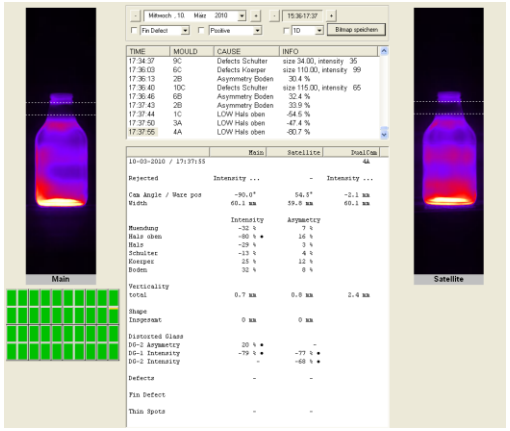
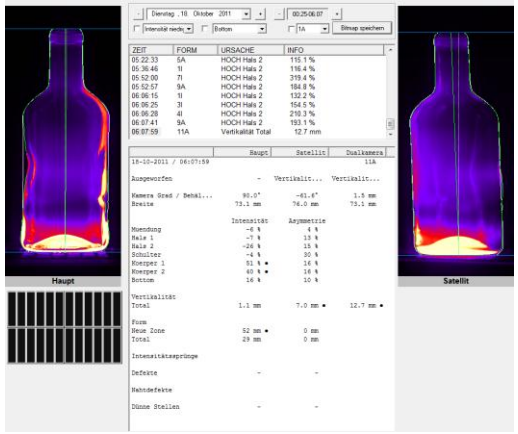
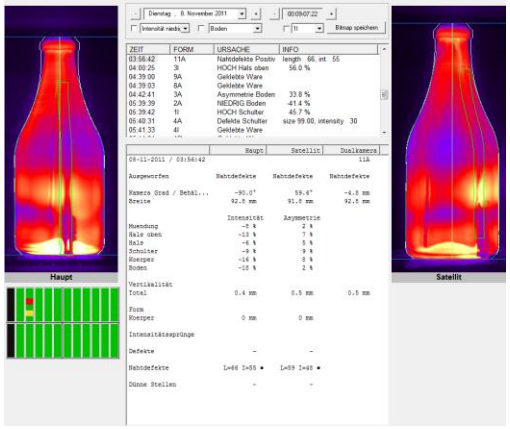
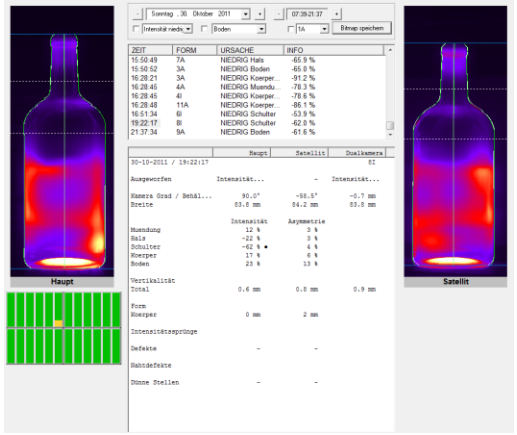
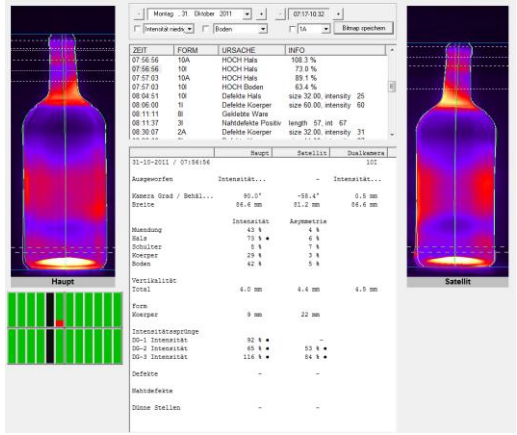
IR-D Reject Options some Examples

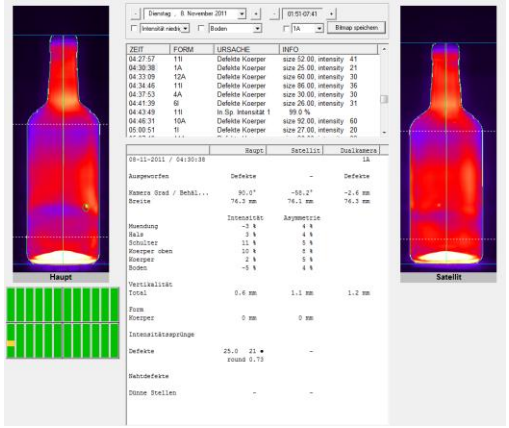












Reasons for using Gob-Assist

- permanent control of all measurable gob parameters before loading into the blanks
- to find out critical points and adjustments regarding the delivery system
- evaluate the influence of swabbing (oiling) deflectors
- to find a correlation between the measured parameters and bottle quality

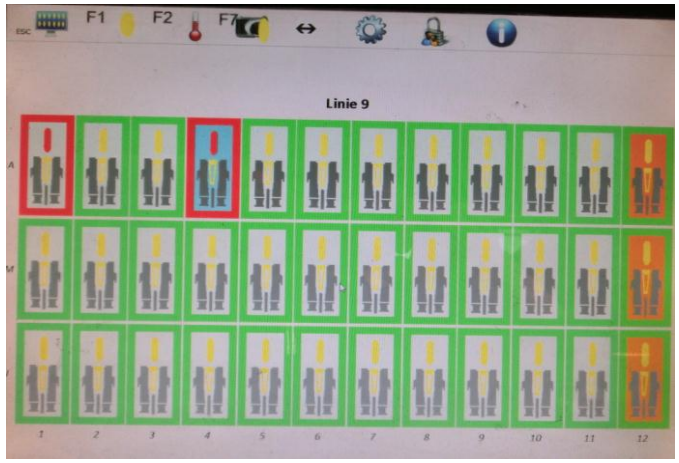
Measuring Equipments

Gob-Assist by XPAR Vision (at Line 9 12sect NIS)

permanent control of

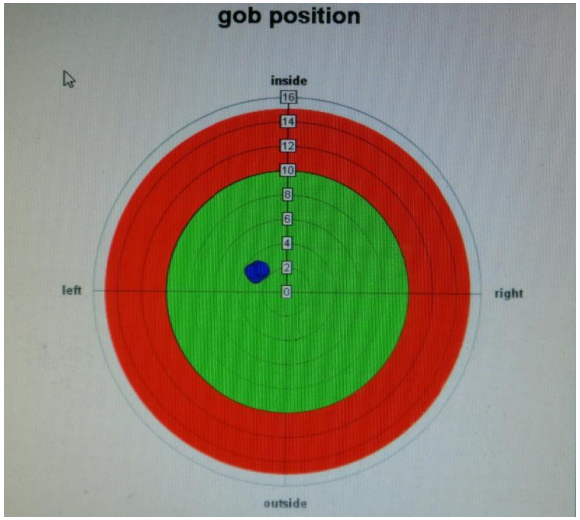
- gob lenght
- gob speed
- TOA (time of arrival)
- gob diameter
- gob loading position (x,y)
- gob orientation (trajectory)

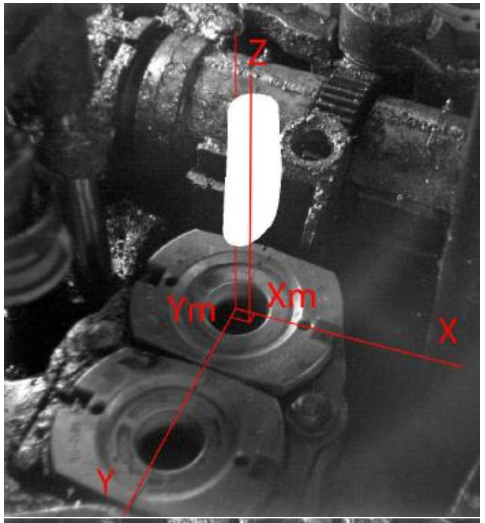
- alarm setting possible in two ways
  (full machine average or reference/cavity)



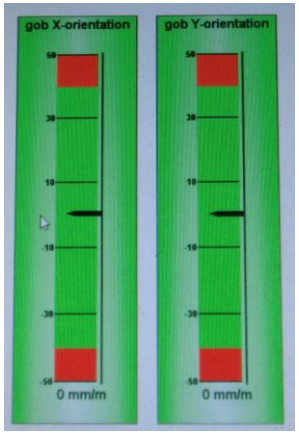
XPAR Gob-Assist

gob loading position

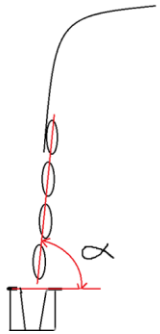




gob loading orientation

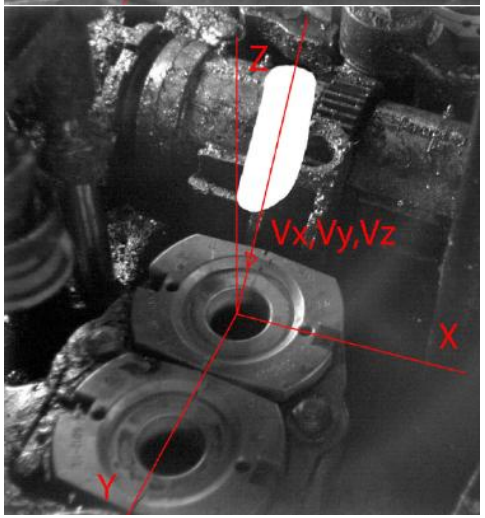


Orientation definition



The orientation is the angle between the trajectory of the falling gob and the top of the mould.

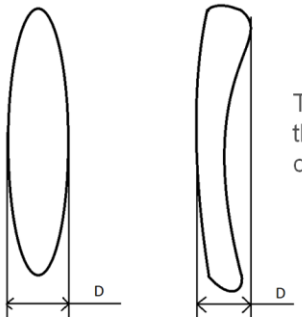
Three dimensional:
two angles!



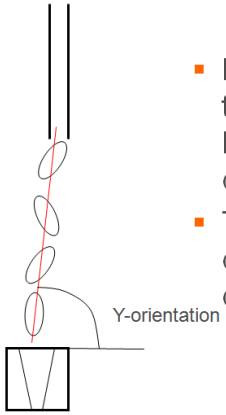
XPAR Gob-Assist

gob diameter

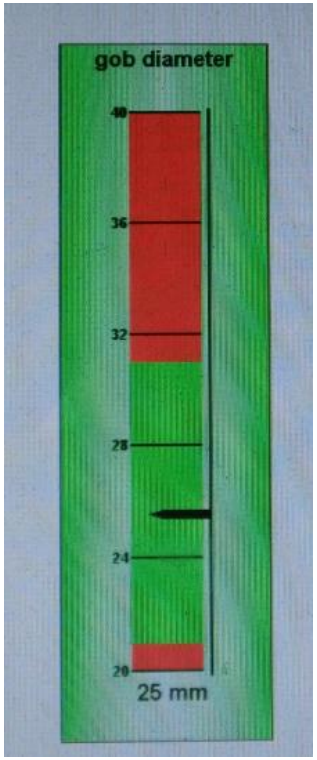
Diameter definition



The gob assist shows the maximum diameter of the gob

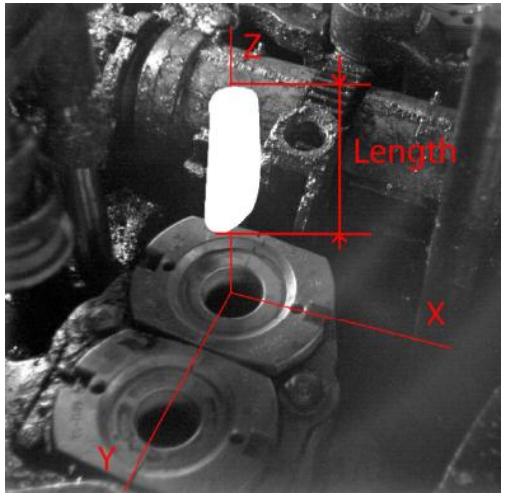


- In this situation the trajectory is the same but the gob loading is different.
- The measured diameter will be different



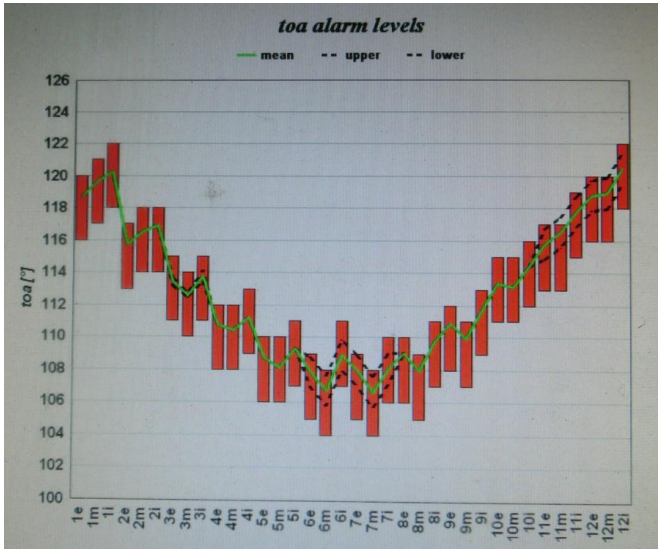
XPAR Gob-Assist

gob lenght



TOA (time of arrival)

time given in machine degrees for all cavities



gob speed

measured in m/s before loding

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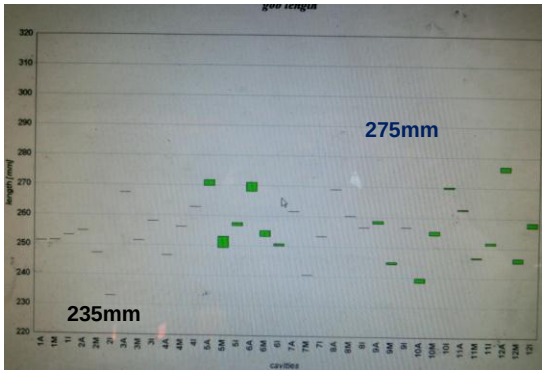
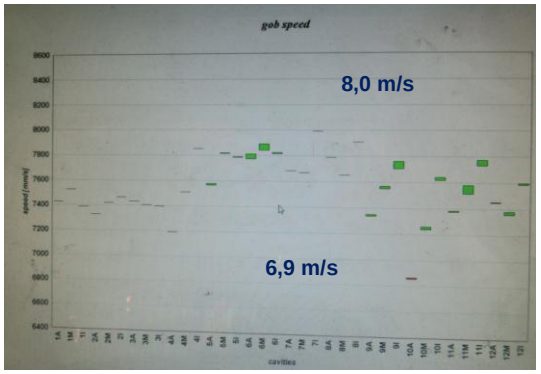
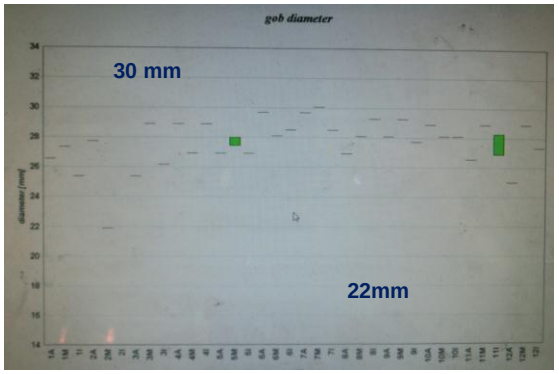
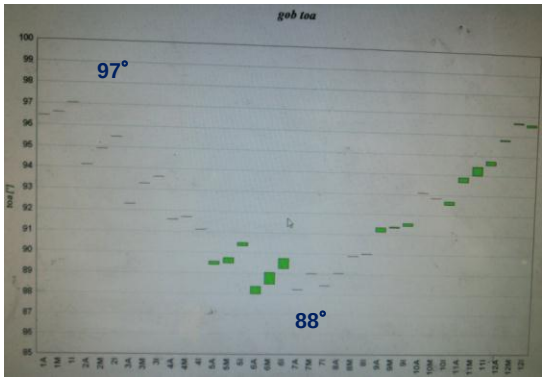
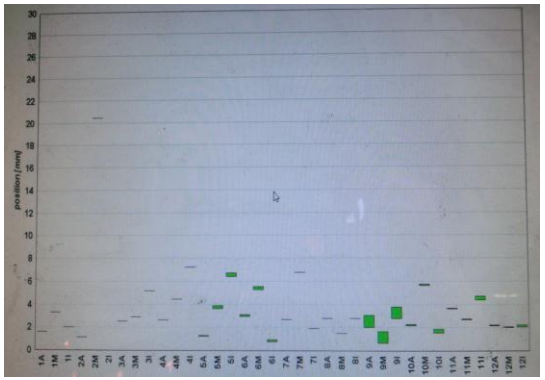
Overview Full Machine NIS 12 sect NNPB 700ml 315gr delivery on for 6 days

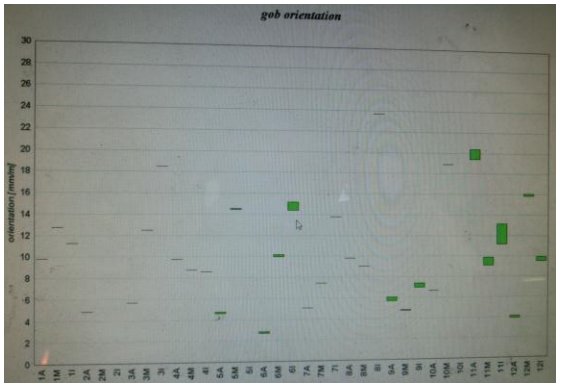












Big variations!

Gob TOA can be used to perfectly adjust the section differential !!!
symmetric sections should have the same values regarding lenght and speed

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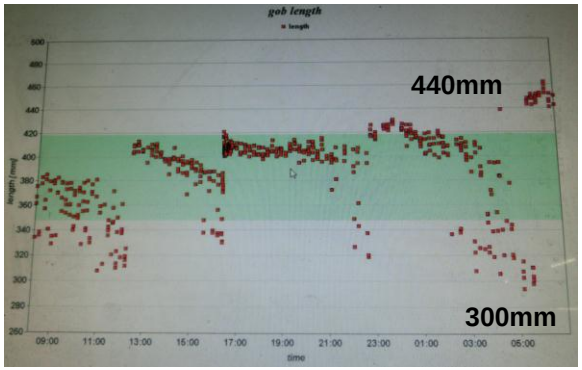
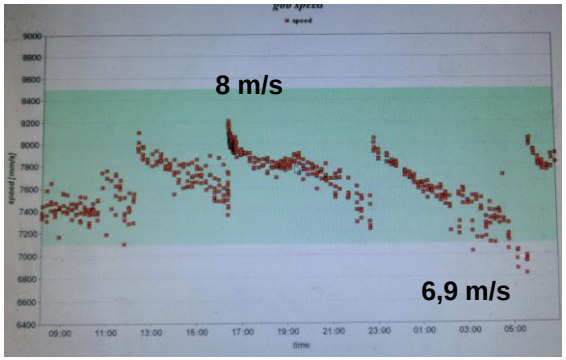
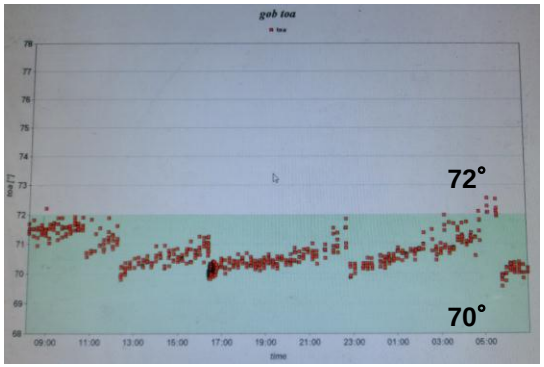
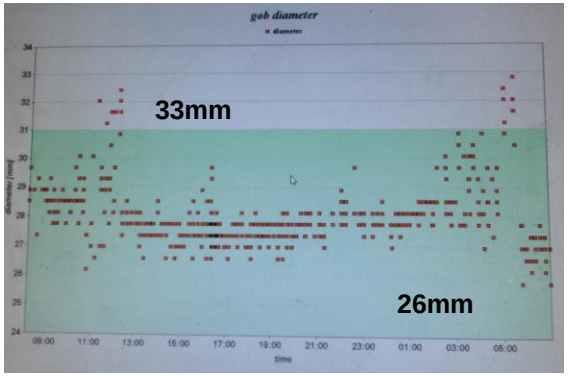
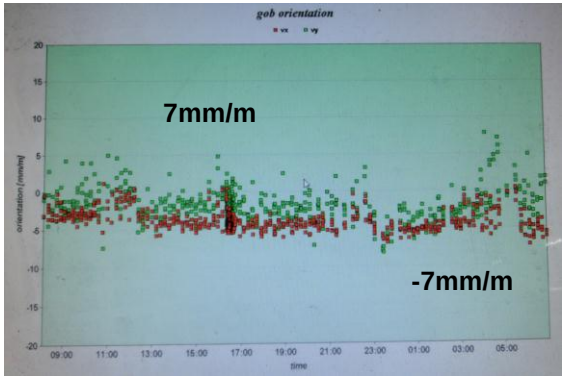
Tremendous Variation during 24h NIS Section 5 Outer 480gr 750ml Bordeaux BB

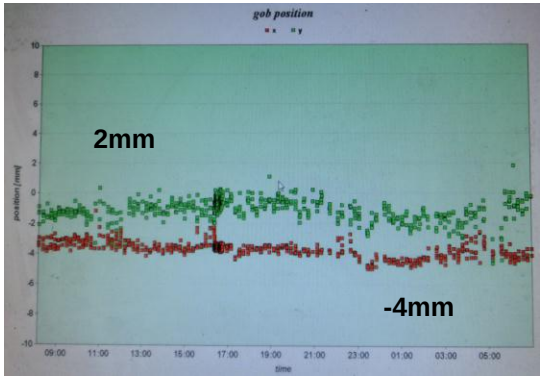












is it real ??? are Gob-Assist Measurements right??

what is the cause for the variations??

Measuring Equipments

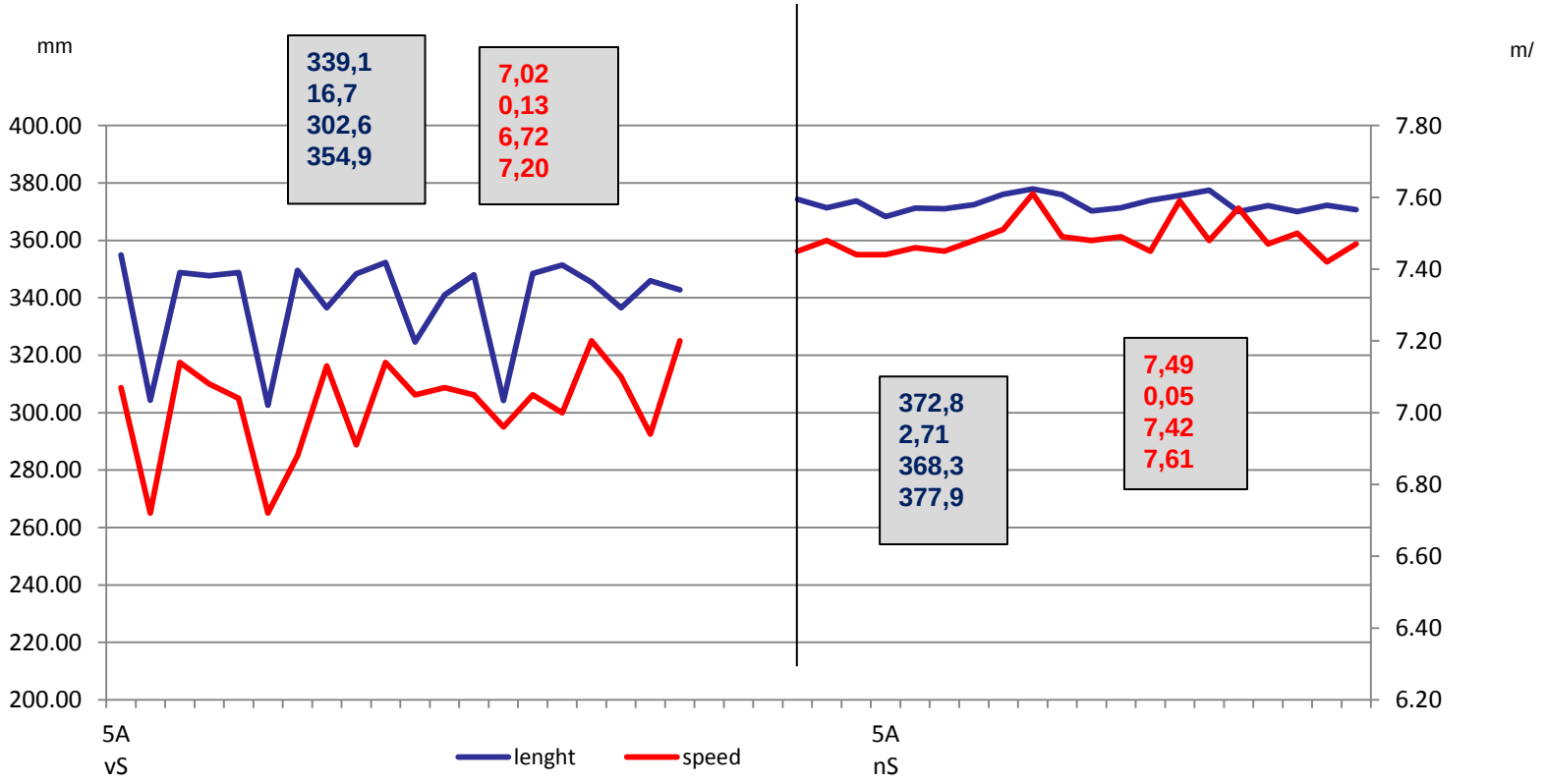
GTS PGM V (Rondot Speedgob)

only gob speed and lenght, but at different positions between the shear mechanism and the end of the deflector

disadvantage:
measurements are time-consuming
single measurements are not significant

gob lenght and speed with PGM V NIS Section 5 Outer 480gr 750ml Bordeaux BB

before and after swabbing the deflector (point of gob impact)



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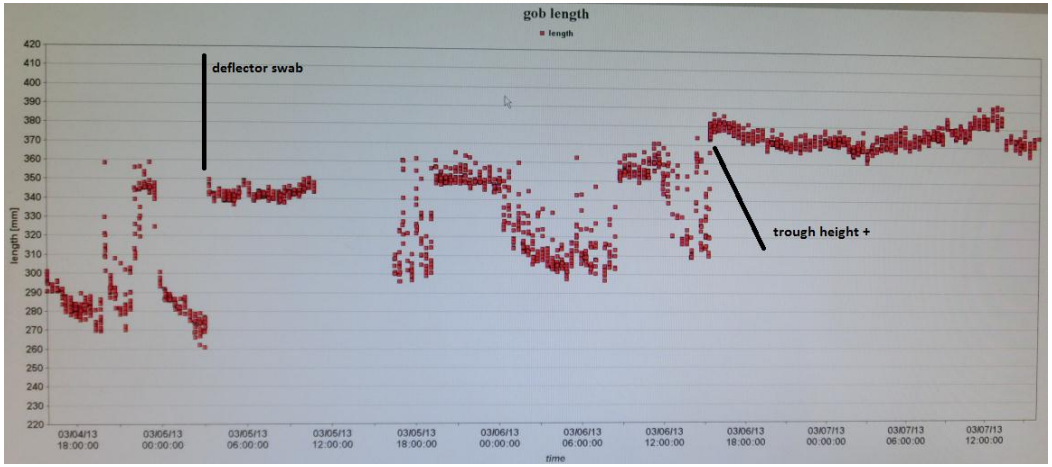
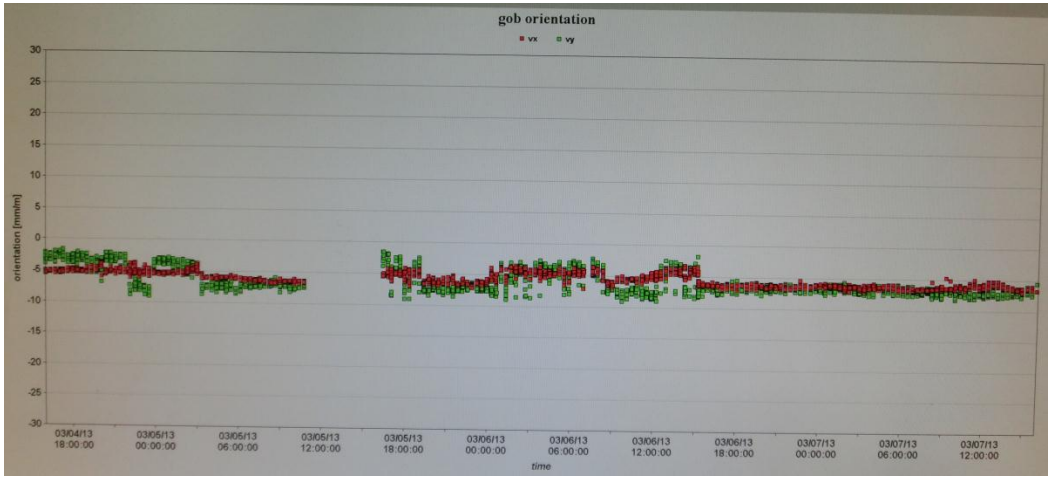
gob lenght and orientation over 4 days NIS Section 5 Outer 460gr 1000ml BB





speed and lenght are changing

orientation is influenced slightly

swabbing is mostly short-time effective

effect of increase trough height is long-term effective

decrease of speed at transition means a loss of energy

these energy is ‚killing' the coating this is even worse with heavier gobs

next slide shows symmetric section 8A

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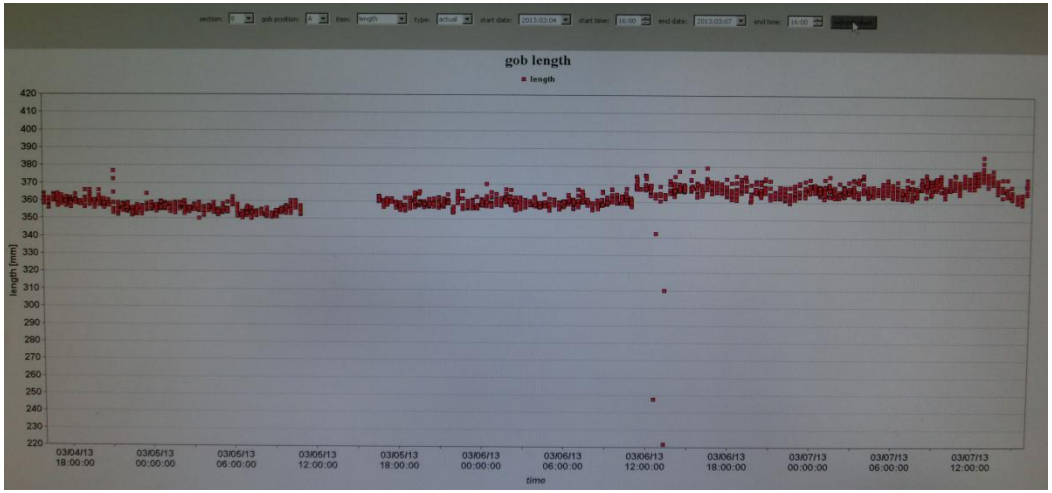
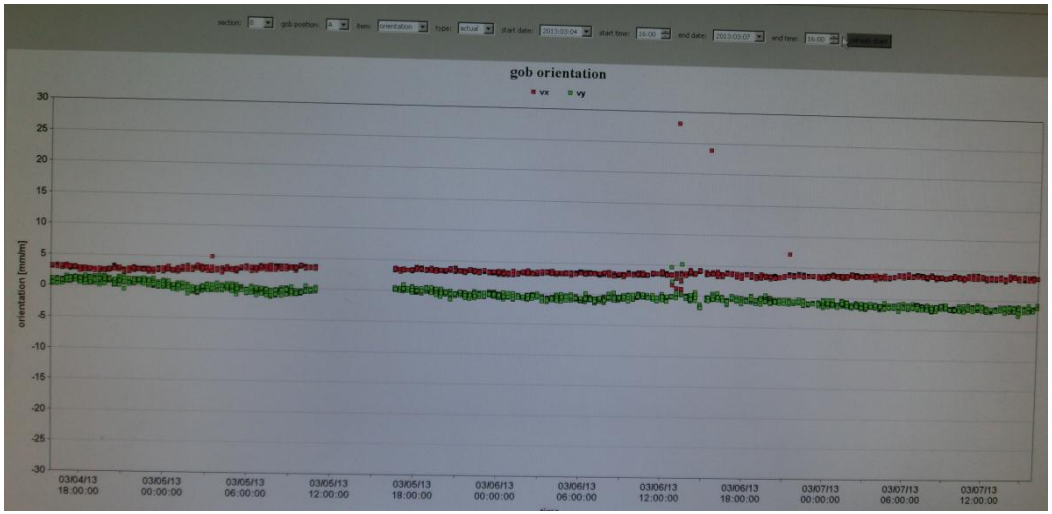
gob lenght and orientation over 4 days NIS Section 8 Outer 460gr 1000ml BB

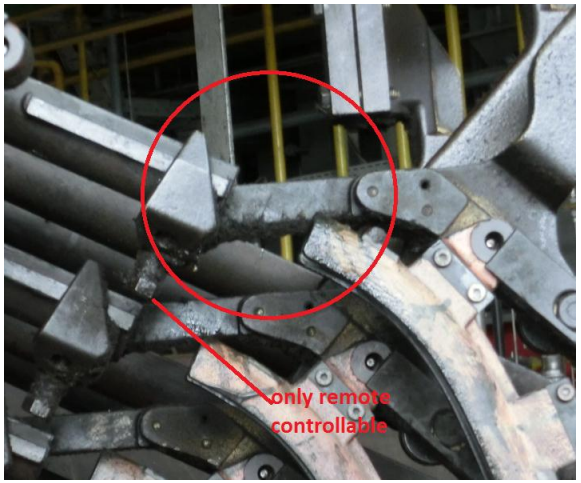




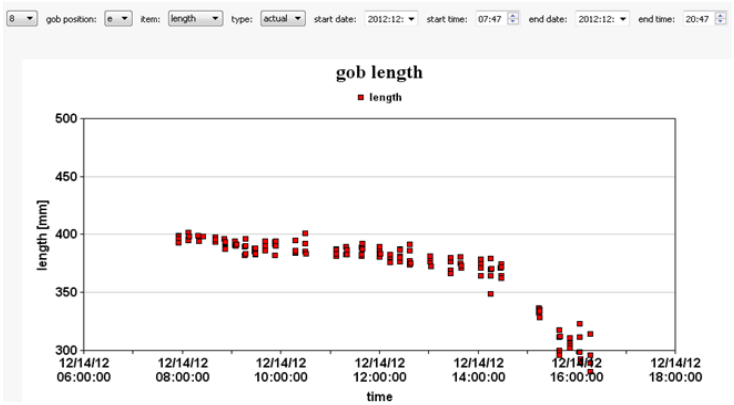
no variations! why??

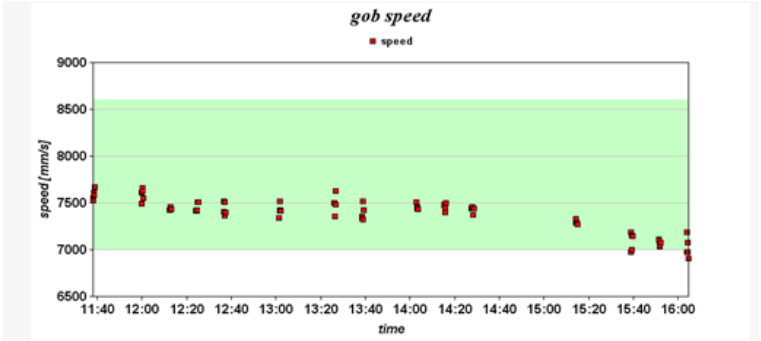
gob transition from trough to deflector trough height!!!

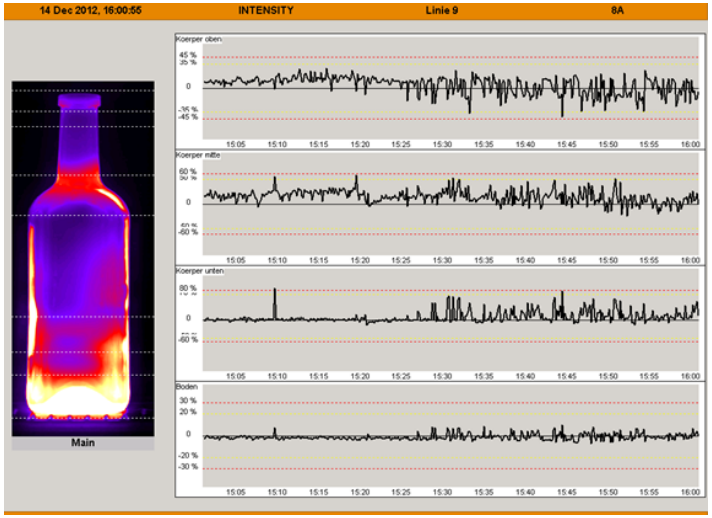
problem:reproducability of trough height

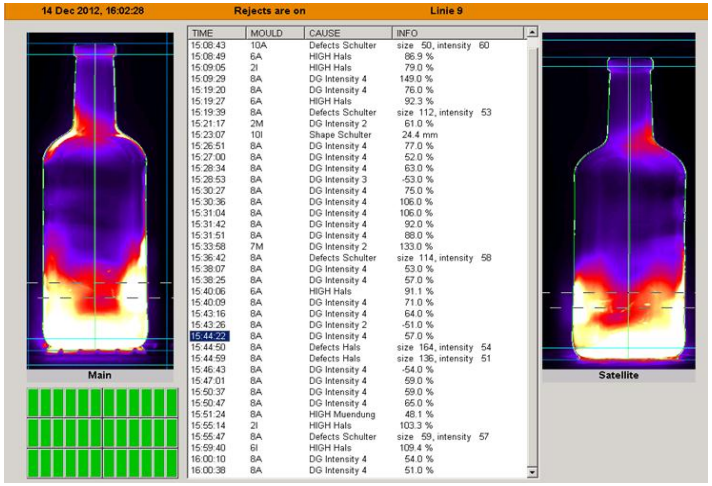


Bad Loading NIS sect 8A 750ml Bordeaux 480gr BB









decrease in gob lenght, increase in gob diameter may cause ‚birdswings‘ !!

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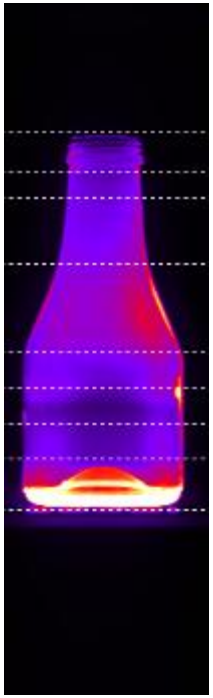
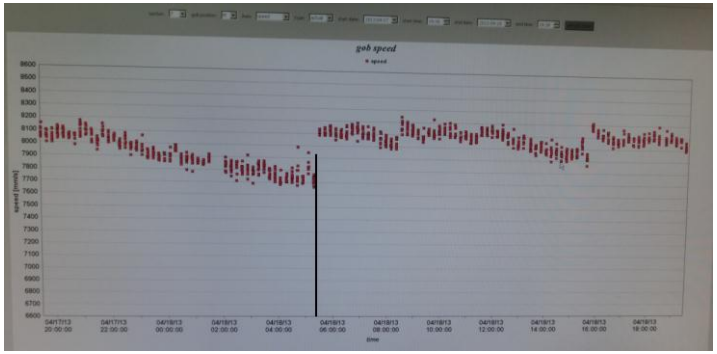
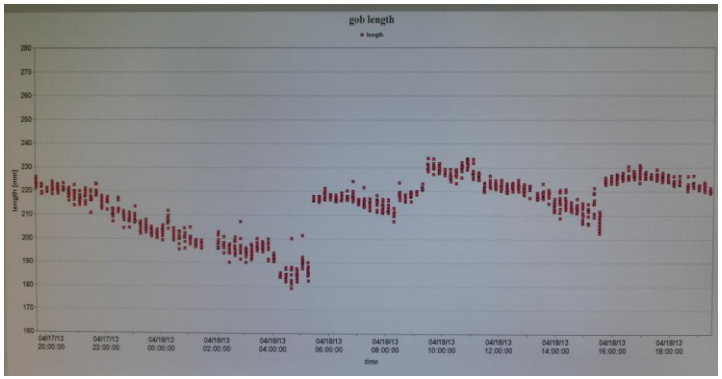
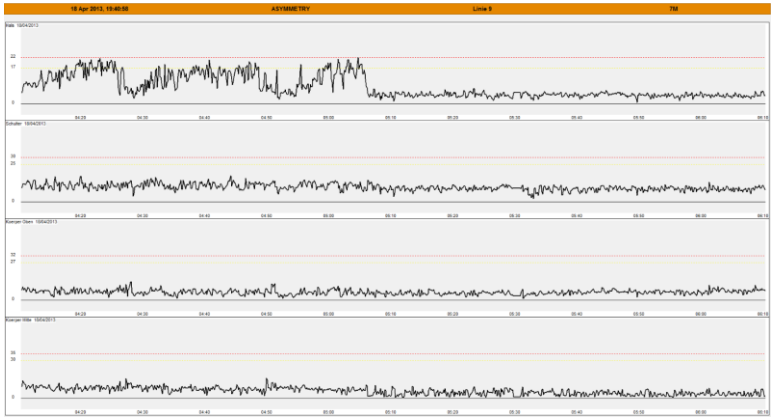
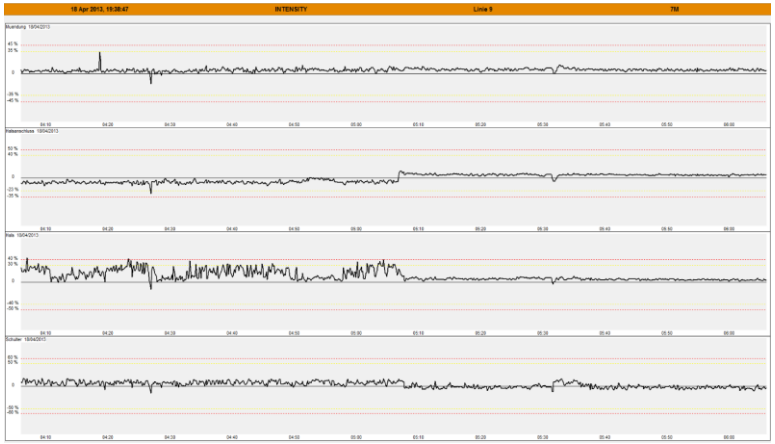
Bad Loading NIS sect 7M 200ml Sparkling Wine 206gr BB











shorter gob – more glass in neck

higher asymmetry

Visual Fault in Neck Area

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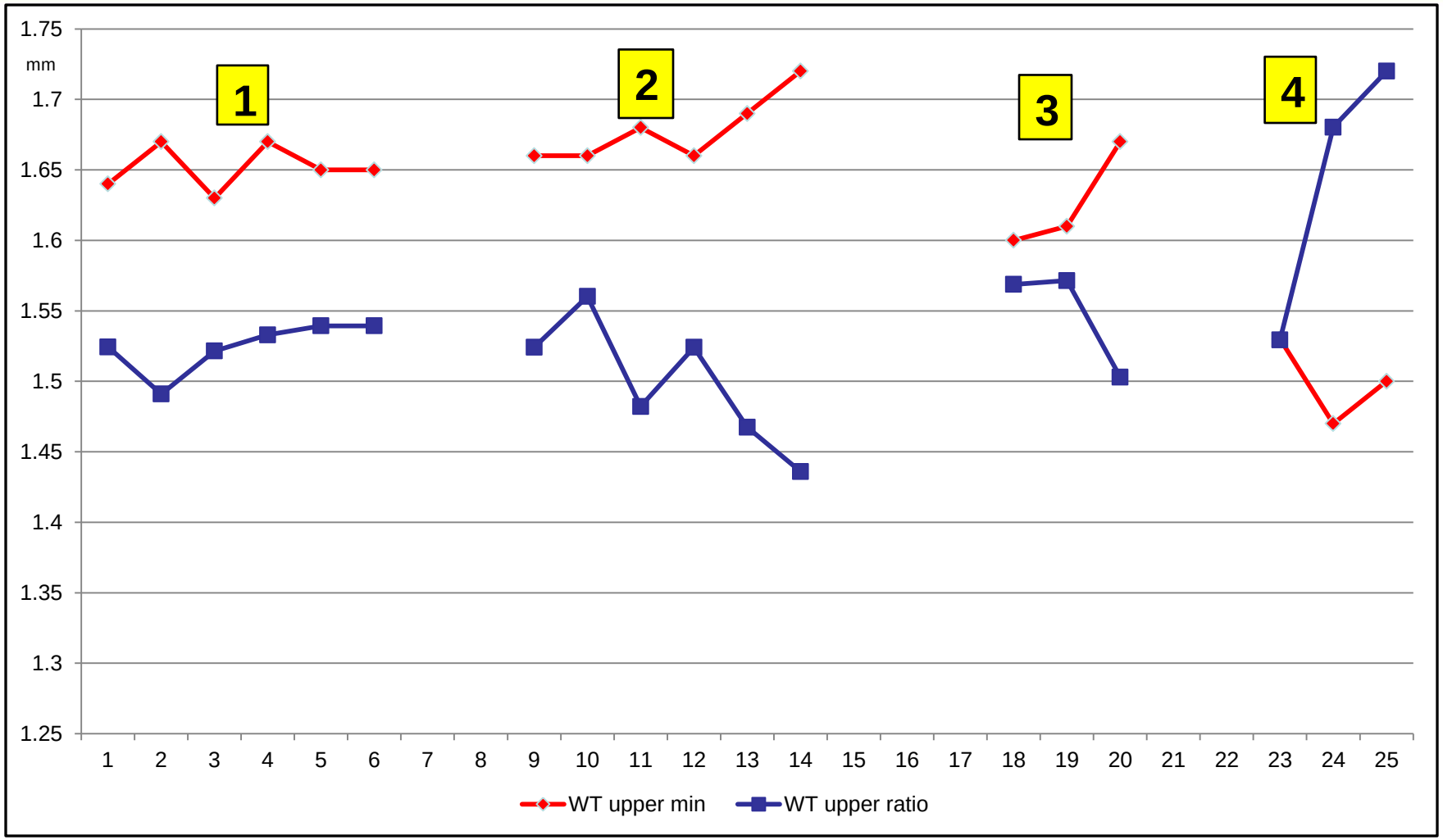
WT Upper Contact Sect 4A Changed Gob Loading Position 1000ml 460gr BB



Conclusions

- Even with the improved (compared to 12 sect AIS/IS) NIS delivery system we see big variations of the measurable gob parameters which have an influence on the container quality
- if you can‘t measure online, you depend on the skillness/experience of the machine operators
- the reproducability regarding adjustments of the different delivery system parts is not good!
- most critical is the transition point trough to deflector!!
- constant lubrication of the impact point will compensate problems, but is in contradiction to ‚dry delivery‘ and may create other problems

Thanks for your Attention !!

Any Questions ??

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