

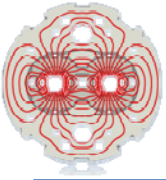
MMM and TEMB - 6 July, 2009

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# Status Report of Magnet Work Week 27 / 2009

Francesco Bertinelli - TE/MSC

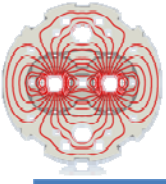
On behalf of - and with several contributions from - surface and IC teams



# Tunnel News

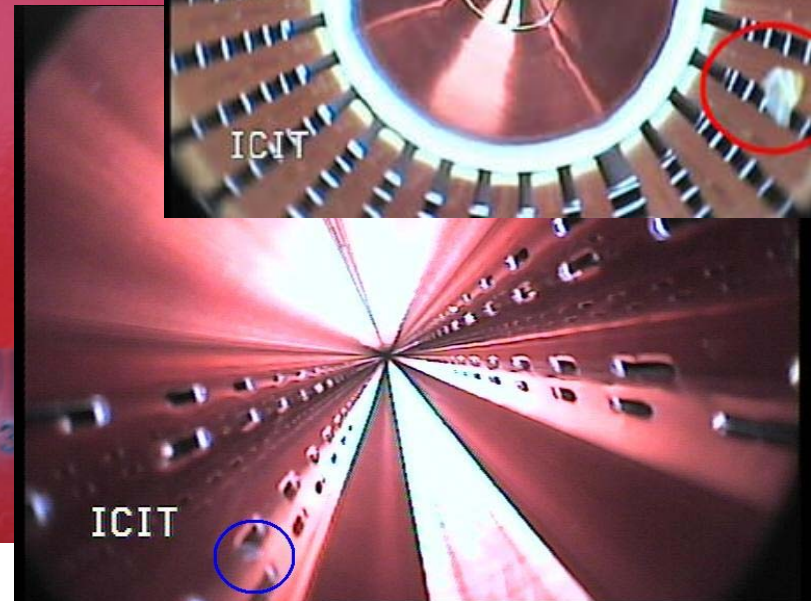
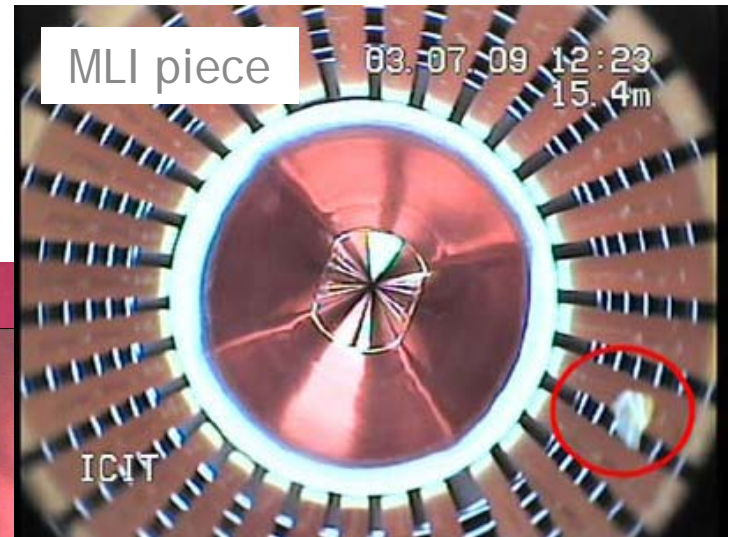
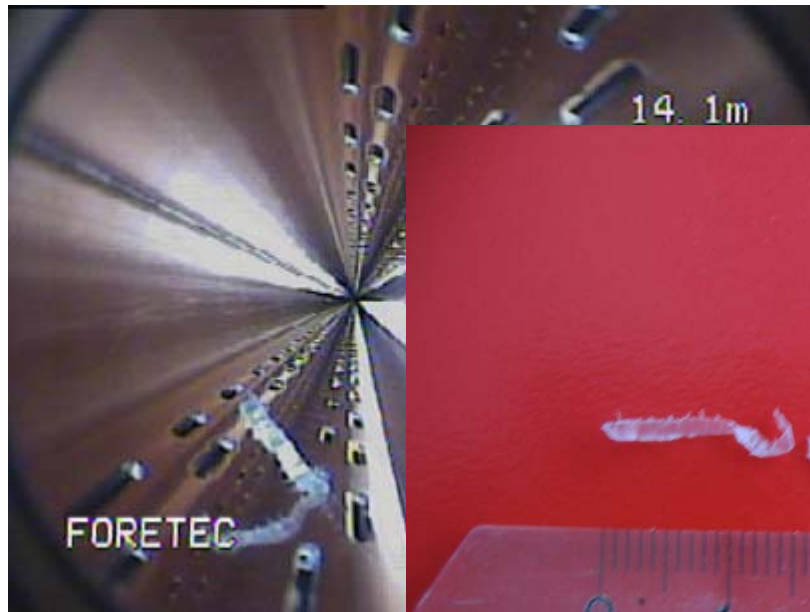
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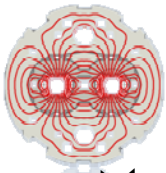
- Sector 3-4:
  - VACSEC 19R3 (Q19 to Q23): helium leak ( $1\text{E-}2$  mbarls<sup>-1</sup> at 1 bar) on the cold mass or c'k circuits
  - Pressure test last weekend (4 July)
- Sector 5-6:
  - Vacuum leak from IFS box in B32L6 (MB2229) located and repaired (backing gas screw, not touched this shutdown)
- Sector 6-7:
  - All electrical connections done
  - W28: last insulations and ELQA, last M and K welds, close last W
  - Segments (MB and MQ) to be remeasured (when?)



# Sector 4-5: beam lines

- PIM intervention required by VSC (old NCR 903606, QBQI.12R4, V1)
- ICIT removed most of plastic shim





# 4-5 First M3 Hit List (for repairs)

Factor 300K/80K

## Sector 45 BEND Bus Segments

### 80 K

### Hit List Shuffle (hash table)

### 300 K

	$\partial R$ [ $\Omega$ ]	x [m]	Bus Segment Span
5.1	13.7u	12660	RBAL.[B16L5<->C15L5]
5.5	10.3u	12735	RBAL.[A15L5<->B14L5]
5.7	9.2u	11773	RBAL.[A33L5<->B32L5]
3.9	9.1u	11698	RBAL.[B34L5<->C33L5]
6.9	9.0u	12537	RBBL.[C18L5<->A18L5]
6.4	8.9u	12339	RBAL.[B22L5<->C21L5]
8.2	8.6u	12553	RBAL.[B18L5<->C17L5]
	7.8u	11239	RBAL.[C26R4<->B27R4]
	7.4u	11522	RBAL.[A32R4<->C32R4]
	7.0u	12858	RBBL.[C12L5<->A12L5]
	6.9u	11842	RBAL.[C31L5<->A31L5]
	6.9u	12697	RBAL.[C15L5<->A15L5]
	6.9u	11805	RBAL.[B32L5<->C31L5]

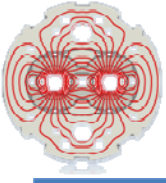
order	$\partial R$ [ $\Omega$ ]	x [m]	Bus Segment Span
	70.9u	12553	RBAL.[B18L5<->C17L5]
	69.6u	12660	RBAL.[B16L5<->C15L5]
	61.9u	12537	RBBL.[C18L5<->A18L5]
	57.3u	12339	RBAL.[B22L5<->C21L5]
	57.1u	12735	RBAL.[A15L5<->B14L5]
	52.0u	11773	RBAL.[A33L5<->B32L5]
	46.0u	10321	RBAL.[A9R4<->A10R4]
	44.6u	12125	RBAL.[B26L5<->C25L5]
	44.3u	12697	RBAL.[C15L5<->A15L5]
	43.8u	12820	RBBL.[B13L5<->C12L5]
	40.4u	12201	RBAL.[A25L5<->B24L5]
	39.0u	11789	RBBL.[C32L5<->A32L5]
	35.1u	11698	RBAL.[B34L5<->C33L5]
	34.0u	12056	RBAL.[C27L5<->A27L5]
	33.7u	12789	RBBL.[A14L5<->B13L5]
	33.2u	11911	RBAL.[B30L5<->C29L5]

Checked: no significant quench cases

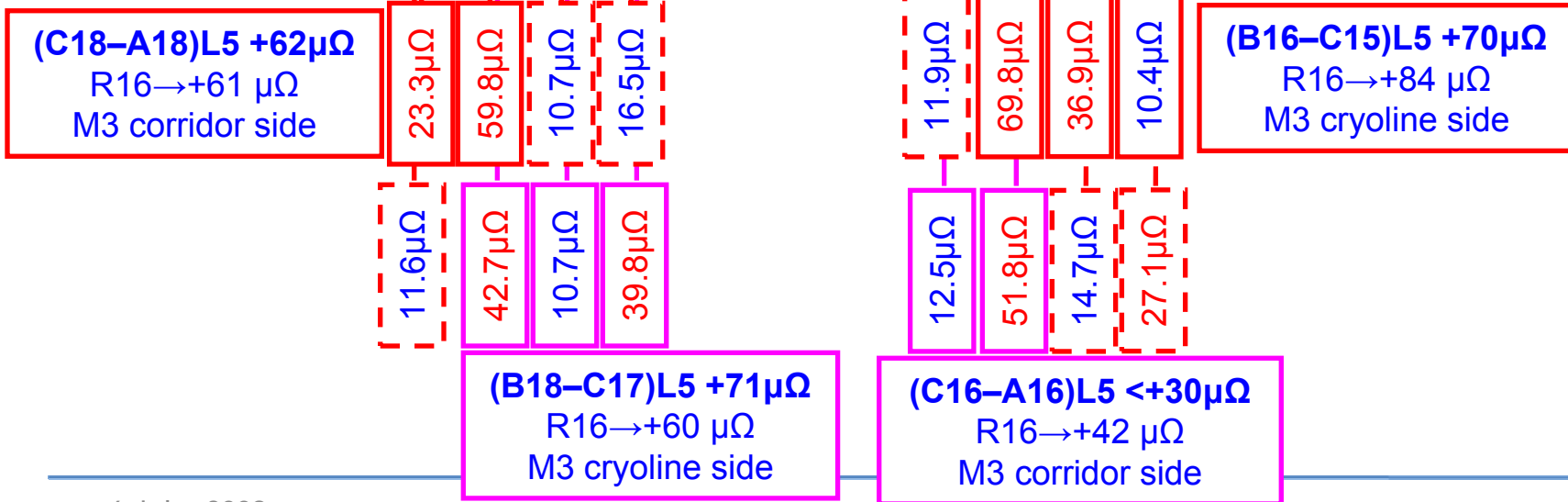
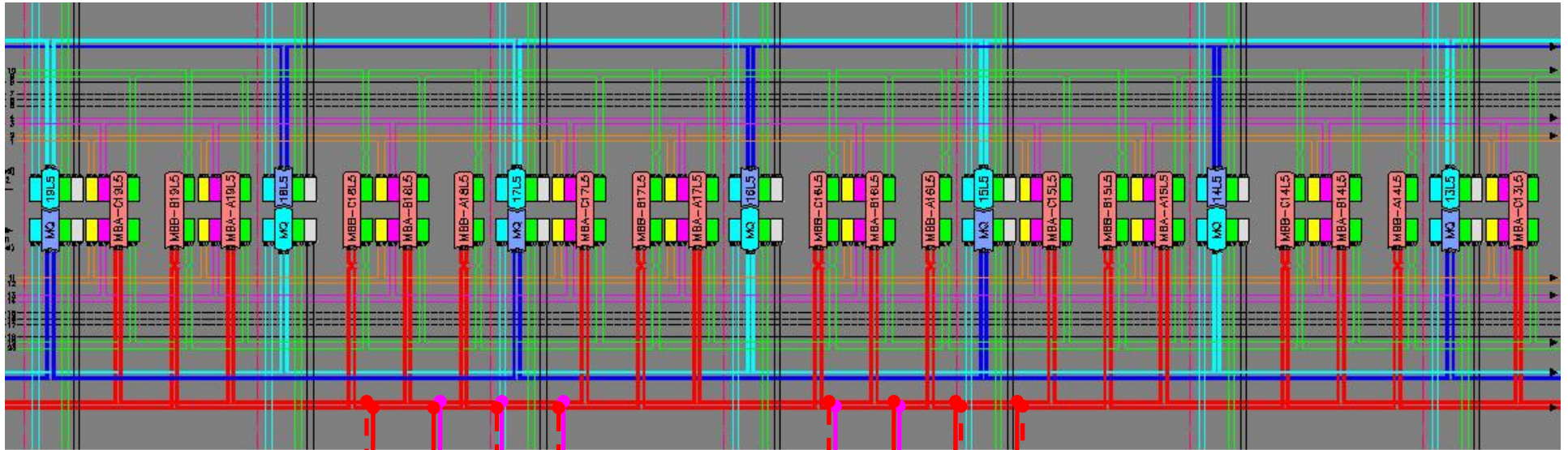
	6.0u	12842	RBAL.[A13L5<->B12L5]
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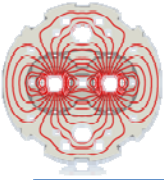
M3 repairs in 4 other warm sectors





# 4-5 M3 R16 cf "Bob"

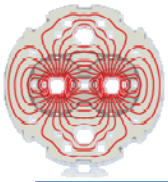




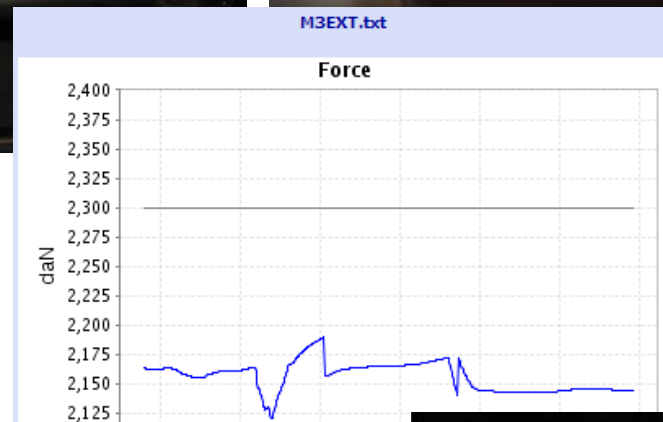
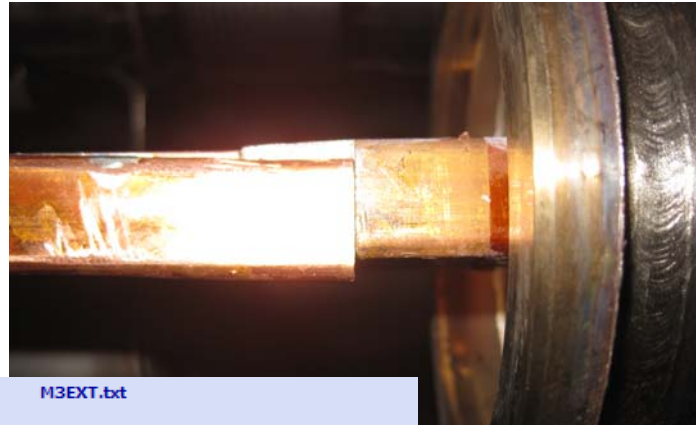
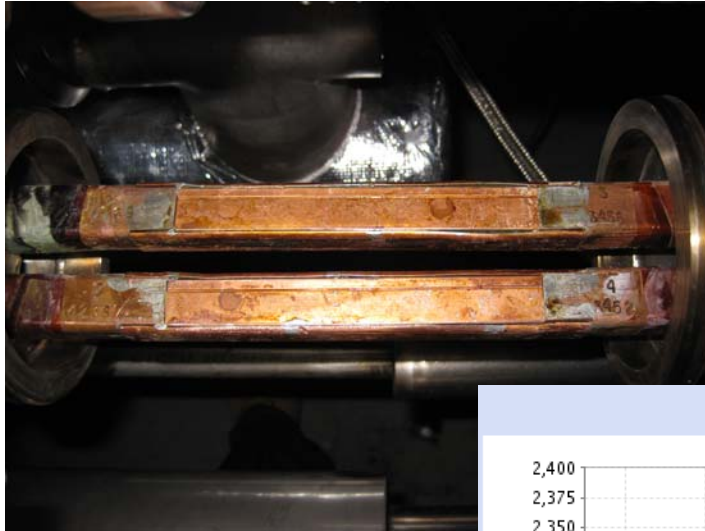
# 4-5 splices repaired

Inter. number	Main busbars	Photos (before unsoldering)	US-test (before unsoldering)	Additional US test bus bar noses	R-16 before unsoldering	Gamma rag control (before unsoldering)	Visual inspection and photos after repair	US-test after repair	R-16 after repair	QC insulation main bus bars	QC insulation spools
<b>4-5</b>											
<b>QBBL11L5</b>	M3-corridor	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	12.0						
	M3-cryoline	done	4 out of 4, P.B., 26.6.09	far left NOK, P.B., 8.6.09	19.4				10.4		
<b>QBBL11L5</b>	M1-corridor	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	20.4						
	M1-cryoline	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	19.0						
	M2-corridor	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	28.1						
	M2-cryoline	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	19.6						
	M3-corridor	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	13.0						
	M3-cryoline	done	4 out of 4, P.B., 26.6.09	both OK, P.B., 26.6.09	11.7						
<b>QBBL15L5</b>	M3-cryoline				10.4						
	M3-corridor				27.1						
<b>QBBL16L5</b>	M3-cryoline				36.9						
	M3-corridor				14.7						
<b>QBBLA16L5</b>	M3-cryoline				69.8						
	M3-corridor				51.8						
<b>QBBLB16L5</b>	M3-cryoline				11.9						
	M3-corridor				12.5						
<b>QBBL17L5</b>	M3-cryoline				39.8						
	M3-corridor				16.5						
<b>QBBLA18L5</b>	M3-cryoline				42.7						
	M3-corridor				59.8						
<b>QBBLB18L5</b>	M3-cryoline				11.6						
	M3-corridor				23.3						
<b>QBBL18L5</b>	M3-cryoline				10.7						
	M3-corridor				10.7						

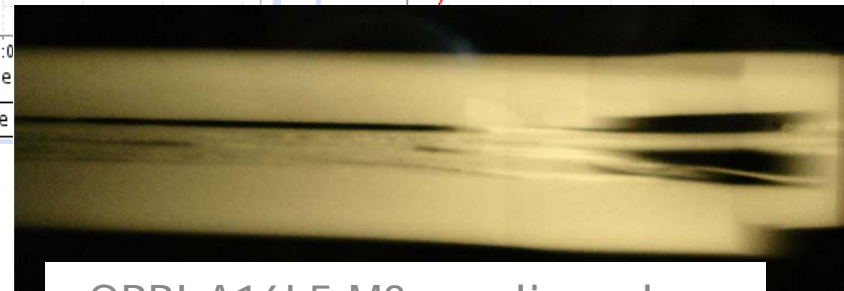
- ~13 splices being repaired



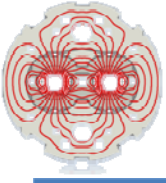
# QBBI.A16L5 cryoline side



QBBI.A16L5 M3 cryoline - connection



QBBI.A16L5 M3 cryoline - Iyra

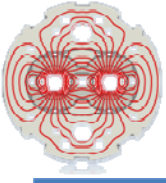


# Pressure relief nozzles

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- Paint removal: all done (BLM reinstallation to start?)
- DN200:
  - DSR4 and 31R4-33R4 done, W closing started
  - Cutting soon finished Monday 6 July, welding by Wednesday 8 July
- DFBA: workshop work finished, re-installation to start





## Sector 4-5 Plan W28

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- Final segment measurements:
  - Monday: partial and complete busbars
  - Tuesday: MQ
  - Wednesday morning: MB
- Splice repairs: finished Tuesday evening
- VACSEC: start pumping Wednesday afternoon (follows segment resistance measurements)
- QBQI.12R4: finish endoscopy Monday (VSC support urgent)
- VSC position: not to install more DN200 (e.g. 12 R4), i.e. potentially ~20 more
- Close 4-5: 1-2 working days later than planned, mid W29
- [Resources starting W29 will be strongly reduced]

