

Chamber Production Status @ Aachen

Status of 03.12.2004

Production Step	No. of SL	Remarks
Mechanically finished	190 SL	Contains 2 spare feet-SL without HV+FE assembly.
Fully assembled with HV + FE	163 SL	Limited by availability of HVB. Assembly interrupted 10/04-11/04.
Fully tested SL	161 SL	2 SL are used for system tests. Limited by assembled SL.
HVB available for	7 SL 15 SL → 185 SL	New HVB_v5 ISR HVB_v1 Assuming no further HVB delivery
Other materials available for	184 SL	Wire bunches for 1 SL missing

Chambers & Production Flow

- Chambers at CERN = 43 MB1 + 9 Feet (Last shipment 8 chambers 03.12.) contains 2 chimney chambers with new HVB
- At Aachen:
 - 3 more finished chambers (1 Feet, 2 MB1)
 - 2 Feet-SL for spare Feet-chamber mechanically finished but not assembled with HV+FE (material shortage)
 - 3 more chambers in packages of 3 SL (with HVB, tested)
 - New HVB for 2 chambers, SL mechanically finished → Assembly started beg. Dec.
 - HVB_v1 from ISR available for 5 chambers, SL mechanically finished → Assembly in Jan.05
- End 2004: 43 + 2 + 3 + 2 (MB1) + 10 (MB4) → 60 chambers done
- End Feb.05: when all HVB are used up → 65 chambers
At this points assembly limited by HVB, 03.12.04 - 190 SL (67 chambers) mechanically finished
- To be done: 10 chambers or 24 SL mechanical prod. → Production speed driven by availability of material for HV+FE assembly

Overview HVB in SL

Different HVB versions are installed in MB1-chambers:

- Wheel YB+2: 10 MB1 + 3 MB4_feet are equipped with HVB-I_v2
- Wheel YB+1: 5 MB1 +z already equipped with HVB_v5
5 MB1 +z still to be done
- Wheel xx: 2 Chimney chambers already with new HVB_v5
2 MB1 -z at Aachen to be equipped with new HVB_v5

HVB-type	No. of SL already equipped	HVB still available for
Old HVB_v1	89 SL	0 SL
HVB_v1 from ISR	36 SL	15 SL
HVB-I_v2	36 SL	0 SL
HVB from new pre-production v5	8 SL (2 chimney + 2 test SL)	0 SL
New HVB without pin protection v5	0 SL	7 SL

Last ISR Activity – November 04

- In 5 MB1 exchanged HVB_v1 with new HVB_v5 (from China)
- Thanks to ISR testing facility several problems (noticed previously) in chamber performance could be fixed
- One chamber with noise problems in theta → to be done
- One dead cell fixed by exchanging HVC+FEB (done 2x in the past, send boards to Matteo)
- Noticed: increased number of bad cathode contacts (~2 per chamber), in the past ~1 in ~3 chambers

Material to Complete Production

Starting point:

- full production = 214 SL
- spare production = 8 phi + 4 theta + 2 feet = 14 SL

Inventory on 04.10.04 and 06.12.04 (counting of available components)

Needed parts for mechanics:

(incl. spare-parts according to “usual” failure-rate)

Item	No. of SL
5000 Tapinis (end-plugs I-beam)	For 12 more SL SL190 + 12 → SL 202/214
20 gas stoppers type B	For 6 more SL SL190 + 6 → SL 196/214
200 contacts end-plugs wires with pin	For 23 more SL SL190 + 23 → SL 213/214
1400 contact cathodes with pin	For 17 more SL SL190 + 17 → SL 207/214

Material Need for FE

Item	Quantity needed for 214 SL	No.of SL possible / all	Requested spare parts**
FEB-16	160	14 / 42	15
FEB-20	20	20 / 42	3
HVC-16	138	12 / 42	15
HVC-20	-	42 / 42	-
LV feed-through	11	11 / 30	2
Slow control bus bar phi	10	10 / 28	1
Slow control bus bar theta	6	6 / 14	1
I2C Predecode bus phi	2*	2 / 28	1
I2C Predecode bus theta	8*	8 / 14	1
Signal feed-through 4-ch.	14	14 / 30	2
Signal feed-through 16-ch.	190	15 / 30	10
Slow control feed-through	15	15 / 30	2
Output cable 40-pins	-	30 / 30	-
Output cable 10-pins	-	30 / 30	-
TP feed-through standard	70	24 / 30	20
TP feed-through special	6	6 / 10	3
Cu-protection slow control	25*	25 / 30	1

Requested spare parts include potentially needed items for chamber repair at the ISR (based on repair experience so far)

Material request based on inventory 06.12.04

Including new delivery (arrived 06.12.04)

*Numbers should be verified

Material Need for HV

Item	Quantity needed for 214 SL	No.of SL possible / all	Requested spare parts**
HVB-16	Available 190+100	22 / 51	-)
JL7 white	232	22 / 51	10
JL7 yellow	212	28 / 51	10
DC4 white	572	34 / 51	15
DC4 yellow	972**	28 / 51	20
DC5 white	89	21 / 51	5
DC6 white	24	27 / 51	2
DC6 yellow	150**	36 / 51	5
DC7 yellow	29	22 / 51	1
Wire bunch phi	23	12 / 34	1
Wire bunch theta	7	9 / 17	1
Ground connector	42	30 / 51	5
Interlock	20	41 / 51	2
Plastic clamps	204	38 / 51	15

Requested spare parts include potentially needed items for chamber repair at the ISR (based on repair experience so far)

** including new delivery

Material request based on inventory 04.10.04

Back-up

Chambers

- Chambers at CERN = 42 MB1 + 10 Feet
 - At Aachen: 3 more chambers (1 Feet, 2 MB1)
 - 2 Feet-SL for spare Feet-chamber mechanically finished but not assembled with HV+FE (material shortage!)
 - New HVB for 2 chambers, SL mechanically finished → Assembly started beg. Dec.
→ $46 \cdot 3 = 138$, $11 \cdot 2 = 22$, $138 + 22 = 160$
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 - $42 + 2 + 2$ (MB1) + 11 (MB4) → 57 chambers, 160 SL done
 - $75 - 57$ chambers = 18 chambers to do
 - $214 - 160$ SL = 54 SL to do
 - $200 - 20 = 180$ SL → 60 MB1 (incl. chimney)
 - 20 SL → 10 Feet
 - Spares: 2 SL for 1 Feet
8 phi + 4 theta for 4 MB1
- SUM: 60 MB1 regular + 10 Feet regular + 4 MB1 spare + 1 Feet spare = 75 ch.

Chamber Production Status @ Aachen

❖ Superlayers:

	Status 17.09.04	Status 03.12.04
Mechanics	176 SL	190 SL
Assembled with HVB	160 SL*	160 SL*
Completely tested	149 SL	149 SL
HVB available for	160 SL	188 SL _{(173+15)**}

*Contains 36 SL with HVB_v1 taken from chambers at the ISR.

**HVB_v1 from ISR for 15 SL still available. HVB_v5 from Aachen assembly available for 9-10 SL.

❖ Chambers:

	Status 03.12.04
Really glued chambers	10 Feet + 42 MB1 at Cern 1 Feet + 2 MB1 at Aachen
Additional SL available for chamber gluing	2 SL
Extrapolation to end 2004 (based on HVB available for 160 SL)	46 MB1 + 10 Feet = 56
Chambers at CERN	44 + 8 (03.12.) = 52