

Status of external production (TCTP)

LHC Collimation Working Group #170 O. Aberle – 03/02/14

Collimator production / exchange in LS1

- ▶ New production of 16 + 4 TCTP
- ▶ New production of 2 + 1 TCSP
- ▶ New production of 2 + 1 TCAPD
- ▶ Preparation of 2 spare TCLP
- ▶ Preparation of 1 spare TCP
- ▶ Layout modification in Pt. 8, removal of 2 TCTVB, shifting TCLIA
- ▶ Pt. 1: Replacement of 4 TCT + by 4TCTP + installation of 2 TCLP
- ▶ Pt. 2: Replacement of 2 TCT + 2 TCLP by 4 TCTP
- ▶ Pt. 3: Installation of 2 new TCAPD
- ▶ Pt. 5: Replacement of 4 TCT + by 4TCTP + installation of 2 TCLP
- ▶ Pt. 6: Replacement of 2 TCS by 2 TCSP
- ▶ Pt. 7: Remove three TCP in IR 7 left and one in IR 7 right (during ventilation door installation to prevent damage) and exchange the skewed TCP of IR7L
(cooling issue)
- ▶ Pt. 8: Replacement of 2 TCT + 2 TCTVB by 4 TCTP
- ▶ Install 2 + 2 TCT from the TCT/TCTP exchange for TCL6 installation (Pt. 1 and 5)

Production of new collimators with BPMs

- ▶ **20 + 1** TCTP to consider:
 - ▶ **12** TCT installed (4 in Pt 1 and 5, 2 in Pt 2 and 8)
 - ▶ **2** TCT added to Pt 2 (replacing TCTVBs)
 - ▶ **2** TCT to modify Pt 8 to the new layout in Pt 2
 - ▶ **1** Pre-series
 - ▶ **3** spares
 - ▶ For the contract in industry: **20 TCTP + 8 options**
 - ▶ Qualification test samples (destructive tests, equals **1** (company) + **1** (CERN) unit)
 - ▶ 5 % extra material at CERN (equals **2** units)
 - ▶ **1** Prototype at CERN MME
 - ▶ **2 TCSP by MME + material for 1 unit**
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Production schedule

- Overall progress good!
- TCSP revealed a topic on the DN 60 flange
- Conflicts for TCAPD/TECG/TCSP for the bake out

ID	Locatio	Task Name	Duration	Start	Finish
8		Point 1	420 days?	18/02/13	24/10/14
33		Tunnel	391 days?	18/02/13	15/09/14
45		Sector 81	382 days?	01/03/13	15/09/14
97		A4L1	323 days?	01/03/13	23/06/14
113		TCTP.4L1.B1 beam vacuum test on surface	15 days	24/03/14	11/04/14
114		TCTP.4L1.B1 Surface bake-out + NEG	5 days	31/03/14	04/04/14
115		TCTP.4L1.B1 beam vacuum test on surface	15 days	24/03/14	11/04/14
116		TCTP.4L1.B1 Surface bake-out + NEG	5 days	31/03/14	04/04/14
119	LSS 1L	Install 2x new TCTP	2 days	14/04/14	15/04/14
174		Sector 12	337 days?	01/03/13	11/07/14
221		A4R1	314 days?	01/03/13	10/06/14
239		TCTP.4R1.B2 beam vacuum test on surface	15 days	20/01/14	07/02/14
240		TCTP.4R1.B2 Surface bake-out + NEG	5 days	27/01/14	31/01/14
241		TCTP.4R1.B2 beam vacuum test on surface	14 days	21/01/14	07/02/14
242		TCTP.4R1.B2 Surface bake-out + NEG	5 days	27/01/14	31/01/14
245	LSS 1R	Install 2x new TCTP	3 days	03/03/14	05/03/14
297		Point 2	426 days?	15/02/13	31/10/14
331		Tunnel	412 days?	21/02/13	17/10/14
341		Sector 12	404.5 days?	01/03/13	16/10/14
445		C4L2 (ex-A4L2)	307 days?	19/03/13	17/06/14
454		TCTP.4L2.B1 beam vacuum test on surface	13 days	22/04/14	09/05/14
455		TCTP.4L2.B1 Surface bake-out + NEG	4 days	28/04/14	02/05/14
456		TCTP.4L2.B1 beam vacuum test on surface	13 days	22/04/14	09/05/14
457		TCTP.4L2.B1 Surface bake-out + NEG	4 days	28/04/14	02/05/14
461	LSS 2L	Install 2x new TCTP	3 days	12/05/14	14/05/14
535		Sector 23	347 days?	01/03/13	25/07/14
573		A4R2	335 days?	14/03/13	22/07/14
579		TCTP.4R2.B2 beam vacuum test on surface	13 days	22/04/14	09/05/14
580		TCTP.4R2.B2 Surface bake-out + NEG	4 days	28/04/14	02/05/14
581		TCTP.4R2.B2 beam vacuum test on surface	13 days	22/04/14	09/05/14
582		TCTP.4R2.B2 Surface bake-out + NEG	4 days	28/04/14	02/05/14
585	LSS 2R	Install 2x new TCTP	3 days	12/05/14	14/05/14
1066		Point 5	416 days?	01/03/13	31/10/14
1085		Tunnel	375 days?	01/03/13	03/09/14
1097		Sector 45	375 days?	01/03/13	03/09/14
1171		B4L5	363 days?	01/03/13	18/08/14
1180		TCTP.4L5.B1 beam vacuum test on surface	15 days	23/06/14	11/07/14
1181		TCTP.4L5.B1 Surface bake-out + NEG	5 days	30/06/14	04/07/14
1182		TCTP.4L5.B1 beam vacuum test on surface	15 days	23/06/14	11/07/14
1183		TCTP.4L5.B1 Surface bake-out + NEG	5 days	30/06/14	04/07/14
1186	LSS 5L	Install 2x new TCTP	3 days	14/07/14	16/07/14
1250		Sector 56	360 days?	01/03/13	13/08/14
1310		B4R5	338 days?	01/03/13	14/07/14
1319		TCTP.4R5.B2 beam vacuum test on surface	15 days	19/05/14	06/06/14
1320		TCTP.4R5.B2 Surface bake-out + NEG	5 days	26/05/14	30/05/14
1321		TCTP.4R5.B2 beam vacuum test on surface	15 days	19/05/14	06/06/14
1322		TCTP.4R5.B2 Surface bake-out + NEG	5 days	26/05/14	30/05/14
1325	LSS 5R	Install 2x new TCTP	3 days	09/06/14	11/06/14
1962		Point 8	413 days?	27/02/13	24/10/14
1995		Tunnel	401.5 days?	27/02/13	09/10/14
2005		Sector 78	364 days?	11/03/13	27/08/14
2047		A4L8	176 days	23/10/13	14/07/14
2050		TCTP.4L8.B1 beam vacuum test on surface	15 days	19/05/14	06/06/14
2051		TCTP.4L8.B1 Surface bake-out + NEG	5 days	26/05/14	30/05/14
2052		TCTP.4L8 beam vacuum test on surface	15 days	19/05/14	06/06/14
2053		TCTP.4L8 Surface bake-out + NEG	5 days	26/05/14	30/05/14
2056	LSS 8L	Install 2x new TCTP	3 days	09/06/14	11/06/14
2087		Sector 81	399.5 days?	01/03/13	09/10/14
2137		C4R8 (ex-A4R8)	279 days	02/04/13	20/05/14
2147		TCTP.4R8.B2 beam vacuum test on surface	15 days	24/03/14	11/04/14
2148		TCTP.4R8.B2 Surface bake-out + NEG	5 days	31/03/14	04/04/14
2149		TCTP.4R8 beam vacuum test on surface	15 days	24/03/14	11/04/14
2150		TCTP.4R8 Surface bake-out + NEG	5 days	31/03/14	04/04/14
2153	LSS 8R	Install 2x new TCTP	3 days	14/04/14	16/04/14

ID	Collimator		Jaw	ID Jaws	Delivery @ CERN
C_01	TCTP1	Jaw A-C	04_0005	22/01/2014	
		Jaw B-D	03_0010		
C_02	TCTP2	Jaw A-C	06_0005	22/01/2014	
		Jaw B-D	07_0010		
C_03	TCTP3	Jaw A-C	08_0005	24/02/2014	
		Jaw B-D	09_0010		
C_04	TCTP4	Jaw A-C	10_0005	24/02/2014	
		Jaw B-D	11_0010		
C_05	TCTP5	Jaw A-C	12_0005	03/03/2014	
		Jaw B-D	13_0010		
C_06	TCTP6	Jaw A-C	14_0005	03/03/2014	
		Jaw B-D	15_0010		
C_07	TCTP7	Jaw A-C	16_0005	31/03/2014	
		Jaw B-D	17_0010		
C_08	TCTP8	Jaw A-C		31/03/2014	
		Jaw B-D			
C_09	TCTP9	Jaw A-C		31/03/2014	
		Jaw B-D			
C_10	TCTP10	Jaw A-C		31/03/2014	
		Jaw B-D			
C_11	TCTP11	Jaw A-C		30/04/2014	
		Jaw B-D			
C_12	TCTP12	Jaw A-C		30/04/2014	
		Jaw B-D			
C_13	TCTP13	Jaw A-C		30/04/2014	
		Jaw B-D			
C_14	TCTP14	Jaw A-C		30/04/2014	
		Jaw B-D			
C_15	TCTP15	Jaw A-C		30/05/2014	
		Jaw B-D			
C_16	TCTP16	Jaw A-C		30/05/2014	
		Jaw B-D			
C_17	TCTP17	Jaw A-C		30/05/2014	
		Jaw B-D			
C_18	TCTP18	Jaw A-C		30/05/2014	
		Jaw B-D			
C_19	TCTP19	Jaw A-C		13/06/2014	
		Jaw B-D			
C_20	TCTP20	Jaw A-C		13/06/2014	
		Jaw B-D			