









Update on D2 correctors

Yingzhe Wang



Progress of series production







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	Coil name		Winding method	Location	Coil stand-alone performance (4.2 K)		Magnet performance at 4.2 K			
MCBRD01	AP1 MCBRD_CB01 AP2 MCBRD_CB03		Wet wind	CERN	530) A	Both apertures reached ultimate current 42			
MCBKD01			Direct wind	CERN	410) A	A, and passed 4-hour stability test			
MCBRD_CB02		CB02	Direct wind	CERN		Failed to reach tl	he design current			
MCDDD04	002 AP2 MCBRD_CB04 AP1 MCBRD_CB06		Wet wind	CEDM	422	2 A	Both apertures reached ultimate current 422			
MCBRD02			Wet wind	CERN	530) A	A, and passed 4*1 hour stability test			
MC	CBRD_CB0	5, 07, 08	Wet wind	IHEP						
MCBRD03	AP2	MCBRD_CB09	Direct wind with new channel size	CEDM	530) A	Both apertures reached ultimate current 422			
	AP1 MCBRD_CB12		Direct wind with new channel size CERN		526 A (25	quenches)	A, and passed stability test			
	MCBRD_	CB14	Direct wind with new channel size	BAMA		530 A (30+34 quench	es), put in quarantine			
MCDDD04	AP2 MCBRD_CB13		Direct wind with new channel size	CEDM	530 A (20+3	3 quenches)	Both apertures reached ultimate current 422 A, and passed stability test			
MCBRD04	AP1 MCBRD_CB17		Direct wind with new channel size	CERN	524 A (47	quenches)				
MC	BRD_CB10	, 11, 15, 16								
MCBRD05	AP1 MCBRD_CB18 AP2 MCBRD_CB19		Direct wind with new channel size	IMP	532 A (42	quenches)	- Assembled in April, <i>test in June</i>			
MCBKD05			Direct wind with new channel size	IMP	530A (68	quenches)				
MCDDD06	MCBRD_CB20 MCBRD_CB21		Direct wind with new channel size	IHEP	530A (68 quenches) 2nd test after thermal cycle is ongoing		Assemble in July, test in August			
MCBRD06			Direct wind with new channel size	IHEP						
MCBRD07	07 MCBRD_CB22 MCBRD_CB23		MCBRD_CB22		RD_CB22 Direct wind with new channel size		Waiting for stand-alone test Waiting for stand-alone test		Assemble in October, test in Neusrahan	
MCBRD07			Direct wind with new channel size	IHEP	Assemble in October, test in November					
MCDDD00	MCBRD_CB24 MCBRD_CB25		Direct wind with new channel size	BAMA	Waiting for VPI Fabrication in June		Assemble in January 2025, test in February			
MCBRD08			Direct wind with new channel size	-			<u>2025</u>			
MCDDD00	MCBRD_CB26 MCBRD_CB27		Direct wind with new channel size	-	Fabrication in August Fabrication in October		A			
MCBRD09			Direct wind with new channel size	-			Assemble in April 2025, test in May 2025			
MCDDD 10	MCBRD_CB28 MCBRD_CB29		Direct wind with new channel size	-	Fabrication in December		11 1 1 2025			
<u>MCBRD10</u>			Direct wind with new channel size	-	Fabrication in	February, 2025	Assemble in July 2025, test in August 2025			

Time table for MCBRD05-10

Magnet Test Magnet Delivery Magnet Test Magnet Delivery			2024						2025													
MCBRD05 Magnet Delivery Stand-alone test Magnet Assembly Magnet Test Magnet Delivery Stand-alone test Magnet Assembly Magnet Test Magnet Assembly Magnet Test Magnet Delivery Magnet Del			May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
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MCBRD06 Magnet Assembly Magnet Delivery		Magnet Delivery																				
Magnet Test		Stand-alone test																				
Magnet Test	MCDDD06	Magnet Assembly																				
MCBRD07 Stand-alone test Magnet Assembly Magnet Test Magnet Delivery Magnet Delivery Magnet Delivery Magnet Delivery Magnet Assembly Magnet Assembly Magnet Test Magnet Delivery Magnet	MCDKD00	Magnet Test																				
MCBRD07 Magnet Assembly Magnet Test Image: Comparison of the co		Magnet Delivery																				
Magnet Test		Stand-alone test																				
Magnet Test	MCRPD07	Magnet Assembly																				
Apertures fabrication Stand-alone test Stand-	WICDRDUT																					
MCBRD08 Stand-alone test		Magnet Delivery																				
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Magnet Test		Stand-alone test																				
Magnet Delivery	MCBRD08	Magnet Assembly																				
Apertures fabrication Stand-alone test Stand-		Magnet Test																				
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Magnet Test		Stand-alone test																				
	MCBRD010																					
Magnet Delivery		Magnet Test																				
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Manufacture of CB24





















Stand-alone test of CB20, CB21



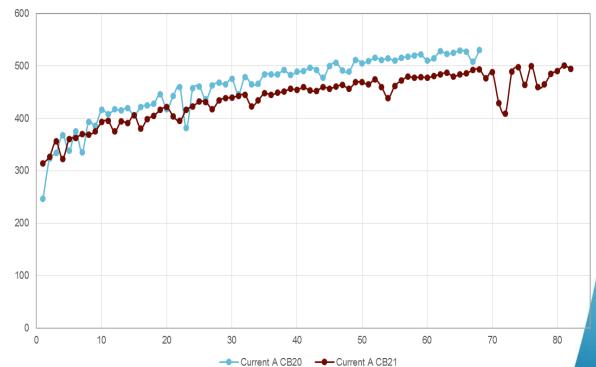




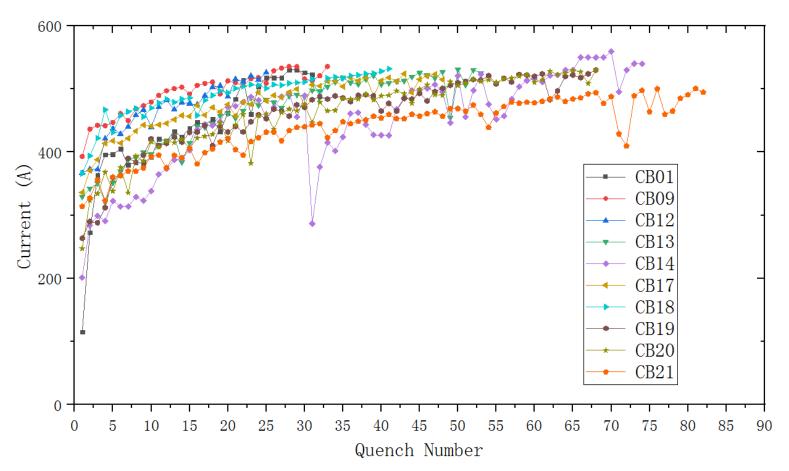








Stand-alone test of All Apertures





Stand-alone test of All Apertures

	141.	1	inner former		outer former		::	Oyen ch mymhen			
	groove depth	layers of GF tape on the bottom	GF size	overlap	GF size	overlap	injection time	Quench number			
CB09	5.2	2*0.14	0.18*50	\checkmark	0.18*50	$\sqrt{}$	3h		33		
CB12	4.9±0.1	2*0.14	0.18*50	$\sqrt{}$	0.18*50	\checkmark	5-6h	2	(526A)		
CB13	4.9±0.1	2*0.14	0.18*50	$\sqrt{}$	0.18*50	$\sqrt{}$	5-6h	5-6h 52			
CB14	4.9±0.1	2*0.14	0.18*50	$\sqrt{}$	0.18*50	\checkmark	5-6h	64(de-training)			
CB17	4.9±0.1	2*0.14	0.18*50	√	0.18*50	√	5-6h		48		
CB18	4.9±0.1	2*0.14	0.18*50	√	0.18*50	√	5-6h		41		
CB19	4.9±0.1	2*0.14	0.18*50	√	0.11*20	√	5-6h		68		
CB20	4.9±0.1	2*0.14	0.11*20	√	0.11*20	√	3h	68	2nd test after thermal		
CB21	4.9±0.1	2*0.14	0.18*50	√	0.18*50	√	6-7h	81(500A)	cycle is ongoing		
CB22	4.9±0.1	2*0.14	0.11*20	√	0.11*20	√	6-7h		-		
CB23	4.9±0.1	2*0.14	0.11*20	√	0.11*20	V	5-6h	-			
CB24	4.9±0.1	2*0.14	0.11*20	×	0.11*20	×	-	-			





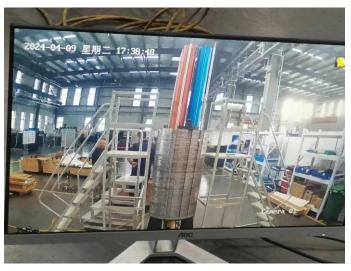








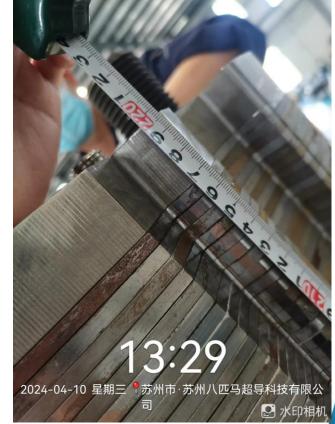




End plate to end plate: 2197mm; Next step: magnetic measurement; assemble the Ultem pieces.



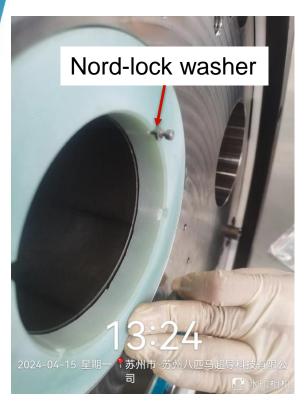




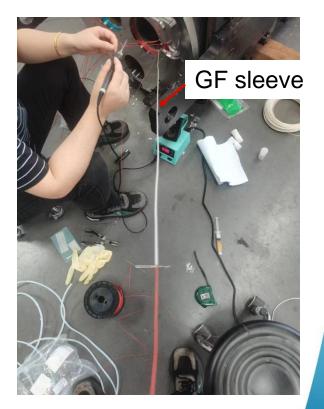










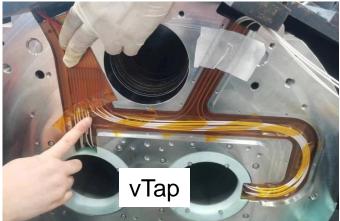


















Packaging of MCBRD05

Summary







- 4 series CCT magnets have been fabricated and shipped to CERN. All of them reached the ultimate current and passed the field quality test.
- MCBRD05 has finished assemble and test of MCBRD05 will be started in June, 2024.
- Apertures of MCBRD06 (CB20, CB21) have finished fabrication and stand-alone test is ongoing.
- Apertures for MCBRD07 (CB22, CB23) have finished fabrication.
- Production rate for the rest of series magnets: every 3 month per magnet
- Components for 2 CCT magnets have been shipped to CERN from IHEP, to verify the performance with components from China and CERN fabrication process.



