

IBC magnet status (after rewind and repairs) – July 3/2019

Old – as built, 2011

	Length (mm)	Inner radius (mm)	Outer radius (mm)	# layers	# Turns	Max A (Amps)	Location (mm)
Transfer-UP	416.24	109.54	110.05	2	3102	17	[ 1069.68 to 1485.92 ]
Transfer-DN (1: upstream section)	95.22	41.33	41.83	2	745.5	17	[ 1497.19 to 1592.41 ]
Transfer-DN (2: downstream section)	305.84	38.15	38.66	2	2394.5	17	[ 1597.98 to 1903.82 ]
HD holding coil	400.0	35.66	36.68	4	6004.0	51	[ 1910.82 to 2310.82 ]

- Transfer-UP: 775 turns, in 2 layers, removed from original coil in Mar-Apr/19;  
 $\Leftrightarrow$  2348 turns in two layers wound on top of original coil in June/19
- Transfer-UP (2: downstream section) has  $3102 - 775 + 2348 = 4675$  turns in 4 layers
  - Length =  $\{ (331-22)_L + (331-20)_R \} / 2 = 310.0$  mm
  - Location: downstream end @  $Z = 1485.92$  mm  
 Upstream end @  $Z = 1485.92 - 310.0 = 1175.92$  mm
- Transfer-UP (1: upstream section) has 1603 turns in 4 layers
  - $Z(\text{downstream end}) = Z(\text{upstream end of Transfer-UP}(2) - \{ (336.5-331)_L + (336.0-331)_R \} / 2 = 1175.92 - 5.25 = 1170.67$
  - $Z(\text{upstream end}) = 1170.67 - \{ (442-336.5)_L + (441-336)_R \} / 2 = 1065.42$
  - Length =  $\{ (442-336.5)_L + (441-336)_R \} / 2 = 105.25$  mm

New – as built, June'19

	Length (mm)	Inner radius (mm)	Outer radius (mm)	# layers	# Turns	design A (Amps)	Location (mm)
Transfer-UP (1: upstream section)	105.3	109.54	110.56	4	1592.0	20	[ 1065.42 to 1170.67 ]
Transfer-UP (2: downstream section)	310.0	109.54	110.56	4	4675.0	20	[ 1175.92 to 1485.92 ]
Transfer-DN (1: upstream section)	95.22	41.33	41.83	2	745.5	20	[ 1497.19 to 1592.41 ]
Transfer-DN (2: downstream section)	305.84	38.15	38.66	2	2394.5	20	[ 1597.98 to 1903.82 ]
HD holding coil	400.0	35.66	36.68	4	6004.0	59	[ 1910.82 to 2310.82 ]

Dump solenoid	475.0	127.5	214.5	8	336	357	[ 2438.4 to 2913.4 ]
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