IMPACTS OF INSTALLING THE REFERENCE MAGNET PLACEMENT IN B245

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The installation of the new ref magnet should obey the following two constraints:

The new ref magnet installed in b245. Only working with the new MPS.

The present ref magnet kept in operation associated with the present MPS only.
Ref magnet characteristics

- Max RMS current: 2560 A
- Resistance: 0.01 Ohm
- Power: 65.5 kW
- Pressure Drop: 12 bars
- Flow rate: ~ 30 l/min
- Temperature rise: ~ 31 Deg C
- Weight: 12700 kG
- Total Length 1750 mm
- Total Width 980 mm
- Total Height 1700 mm
- The magnet must be supported ~ 300 to 500 mm off the ground to allow for the connection of the cables and water.
Ref Magnet placement in b245

1000mm
1600mm
1750mm
1000mm

A-A
1:100
Ref Magnet placement in b245

- Reference magnet
- Bmeas control racks
- DCCT + electronics

Dimensions:
- 1mt
- 2.75mt
- 5mt
Required modifications
One additional cooling circuit (copper) dedicated to the ref magnet with performance specified below.

- **Power**: 65.5 kW
- **Pressure Drop**: 12 bars
- **Flow rate**: ~30 l/min

Estimated additional cost: 80kCHF
Additional cable ladders for power connection of the ref magnet with MPS
Additional 230V feeders for control racks in the ref magnet fenced area

Estimated additional cost: 30kCHF
Additional dc power cable length required for about 300mt

Estimated additional cost: 30kCHF
Positioning of the ref magnet on the external concrete slab and transport inside the building along the red path

Estimated additional cost (for tooling): 30 kCHF
3.5mt
- New loads to be considered on the concrete floor (13 tons on 1.75 x 0.98 m plus transport load) → ok, if outside of technical gallery TP9
- Must increase the dimensions of the “breche” for cable ladders → ok

Estimated additional cost: 5 kCHF and without additional delay if decided NOW
Estimated total additional cost : 175kCHF

Estimated delay for the completion of b245: no delay if declared NOW