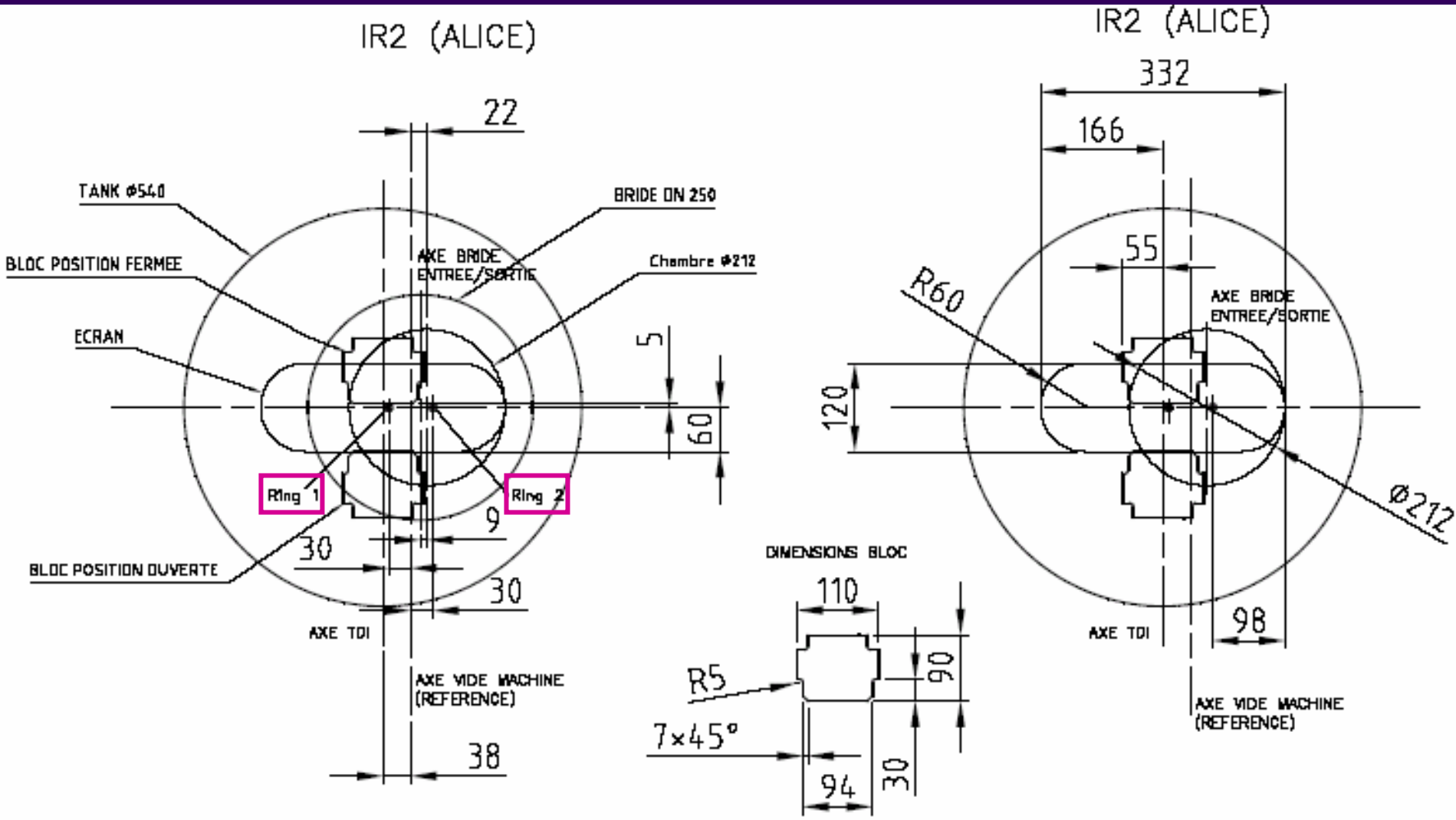
FOLLOW-UP FOR THE TDI = LHC injection beam stopper

E. Métral

- **The TDI is a special "collimator" to be used for protecting the machine from a potential misfiring of the injection kickers ⇒ At injection only (opened at extraction)**
- **1 per ring ⇒ 2 in total**
- **See RLC presentation on 11/06/2004 ⇒ Resistive heat load of ~ 100-200 W**

TDI configuration for ALICE



Follow-up of questions raised during the last RLC meeting on 12/09/06

- **1) Follow-up with Brennan the TDI gap requirements $\Rightarrow$ Email from Verena Kain:**

  "The TDI provides damage protection against injection kicker failures. It will only be close to the beam during injection. Two parameters determine the required setting of the TDI: the injected intensity and the LHC available aperture. If the injected intensity is above 2e12, the TDI jaws have to be moved to the nominal setting determined by the LHC aperture (6.8 σ setting for 7.5 σ available aperture)"

- **2) Check that beam-induced heating of several kW is acceptable $\Rightarrow$ Email to Oliver Aberle:**

  "We estimate the acceptable heatload up to 20kW. We will try to do during the bake out cycle some measurements in the lab"

Follow-up of questions raised during the last RLC meeting on 12/09/06

- **3) Clarify TDI operation mode with Brennan ⇒ Email from Brennan Goddard:**

  "Both beams go through the TDI at all times, from injection up to top energy - the TDI jaws are retracted away from the beam once the injection process is finished, i.e. they will be close to the beam for about 20'"

- **4) Follow up no. of TDIs w/o ferrite and spares ⇒ Email from Volker Mertens (confirmed by Oliver Aberle): "…the ferrites will be included in the TDI which will be installed in LSS8R in the shutdown 2007/2008 in replacement for the "first version". Ferrites will also be installed directly in the TDI which will be installed in LSS2L in early 2007. The presently built "first version" without the ferrites will be installed in a couple of weeks in LSS8R and then come out after the 450 GeV "engineering run" and will be reworked as a common spare for IR 2 and 8"**