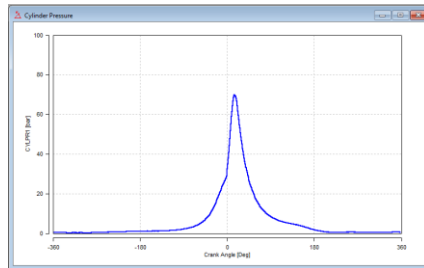


catoolRT

TDC Determination

catoolRT includes a tool to ensure the data acquisition is synchronised to the engine timing.

Start the data acquisition and ensure the pressure trace is approximately centred on zero degrees:

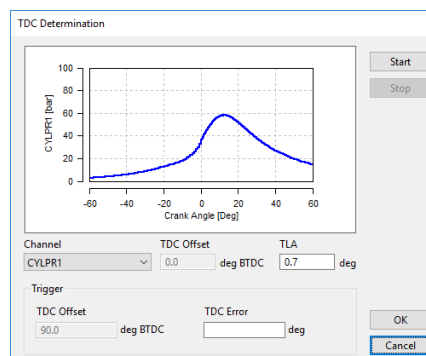


Open the tool by selecting "Acquisition" -> "TDC Determination" or pressing F9.

Change "Channel" to the one you are going to use for the determination.

If you are using a cylinder pressure then apparent TDC will occur slightly ahead of the actual TDC due to heat transfer and mass loss. This offset is called the Thermodynamic Loss Angle (TLA) and is approximately 0.7 degrees.

If TDC is measured using a proximity probe, i.e. AVL OT-SENSOR 428 or Kistler 2629C then set the TLA to zero degrees.



Press "Start" to begin the determination.

Stop fuel injection either through a sufficient "throttle blip" to enter fuel cut or disable the cylinder's fuel injector. DO NOT DISCONNECT A DIESEL COMMON-RAIL PIEZO INJECTOR! Although Diesel engines do not cut fuel the minimum pulsewidth combustion should be sufficiently past TDC to determine the pressure curve symmetry.

It is not advised to disable spark as unburnt fuel may burn on the catalyst, if fitted, and cause substrate damage.

Once sufficient engine cycles have passed and their standard deviation is low enough a "TDC Error" value will be determined.

Click "OK" to apply this to the TDC offset.