

Powertrain and Control

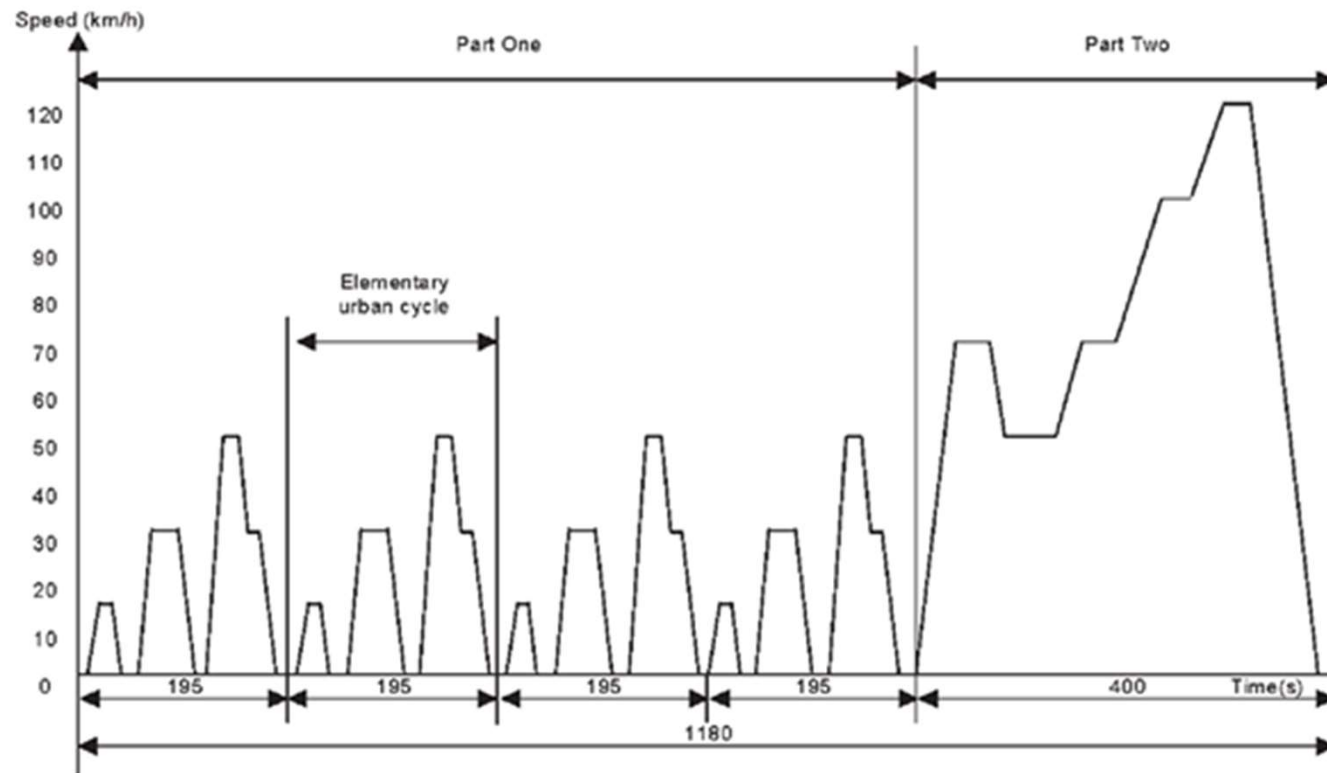
M5X00404

Week 1

Introduction

- Give assignment
- Sort into groups

NEDC (New European Driving Cycle)



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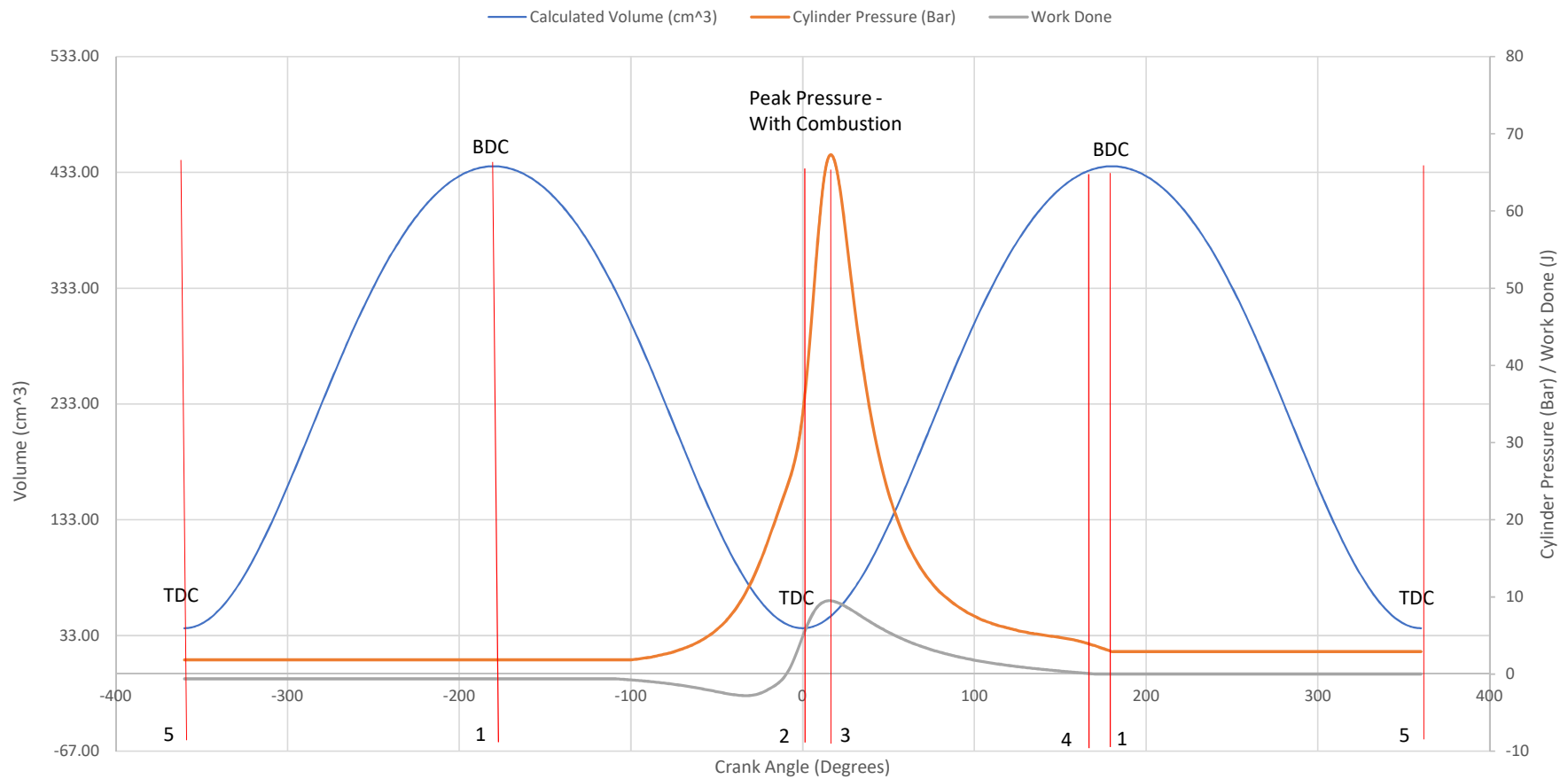
- Measured Emissions
 - CO – Carbon Monoxide
 - HC – Unburned Hydrocarbons
 - Nox – Nitrogen Oxides
 - Particulates - Soot

Otto Cycle

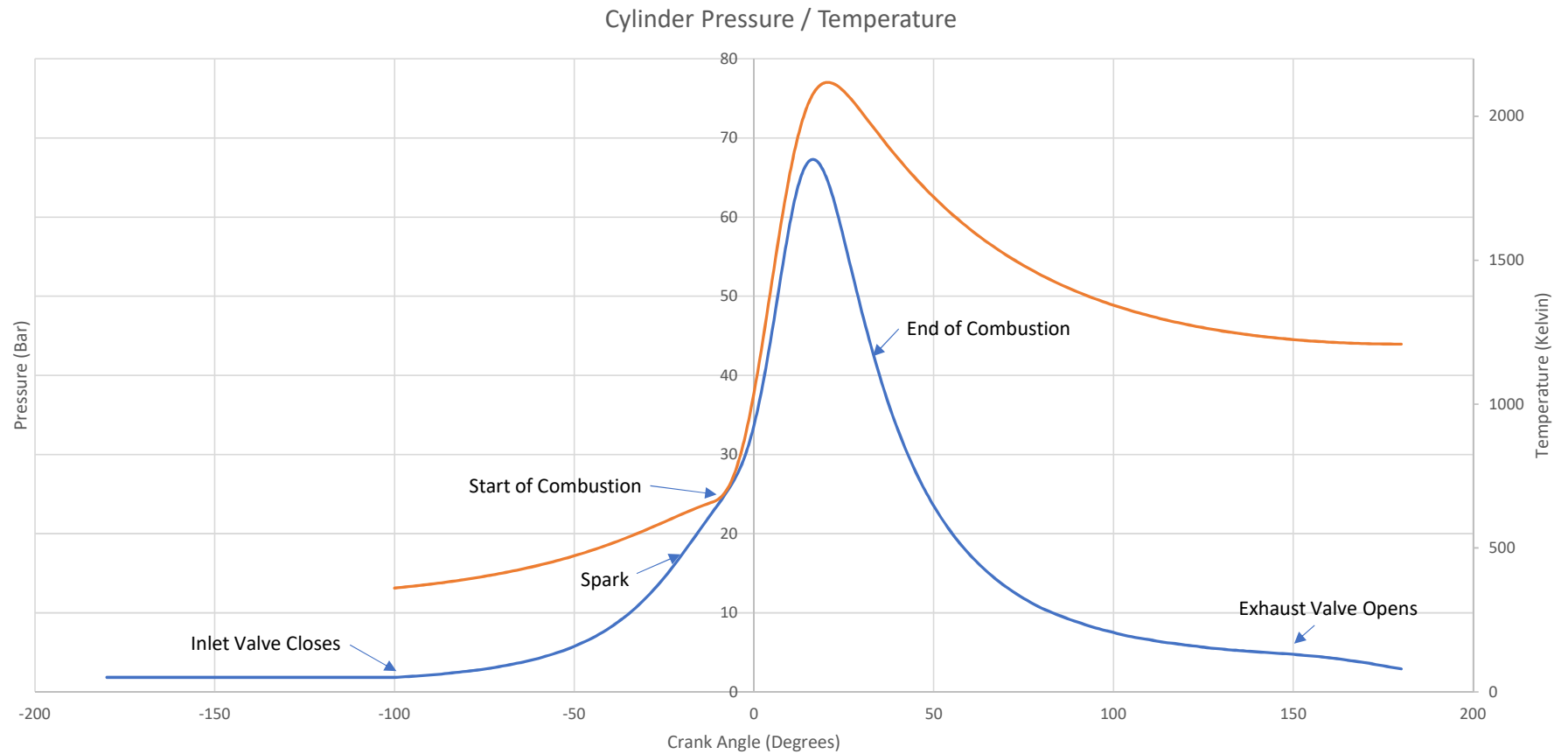
Otto Cycle



Volume/Pressure/Work Done

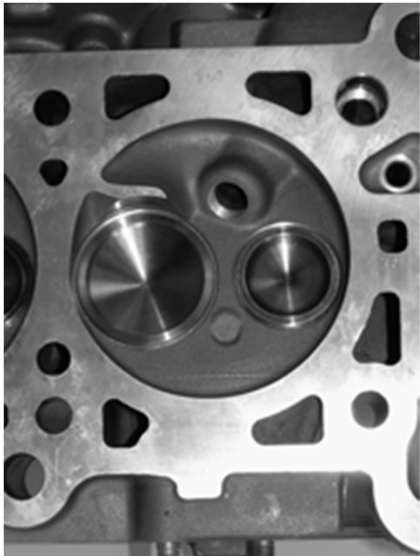


Cylinder pressure



Combustion

Two Valve Engine – Flame has further to travel to burn the mixture.



Twin Spark Engine – Two valves, two spark plugs, less distance flames need to travel to burn mixture.

Four Valve Engine – Flame has a shorter distance to travel to burn the mixture.



Group Work

- What is the successor to the NEDC and how is it different?
- Why do you want to lower the temp in cylinder after combustion?
- What are we trying to achieve with good flow in a cylinder head?