

Bell Nozzle Rocket Engine Calculations

Ben Calow

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Contents

Nomenclature

P	Pressure
T	Temperature
γ	Ratio of specific heats
$mol\%$	Mole percentage

Subscripts

c	Chamber
t	Throat
e	Exit
a	Ambient

Introduction

Documentation of calculations for a bell nozzle rocket engine

1 Propellant

1.1 Propellant Stoichiometry

2 Exhaust Gasses

2.1 Ratio of Specific Heats of a Multi-Compound Gas

2.2 Stagnation Pressure

2.3 Stagnation Temperature

3 Combustion Chamber Geometry

4 Throat Geometry

5 Nozzle Geometry