A collaborative LaTeX document

Class of ID2090, Third Trimester of 2021 batch

June 14, 2022

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1 Introduction

This file includes tex files from the folders of each student. The students are expected to update the file named after their roll number and place any images in the same folder. Students do not have to edit this master document. Once the student has sent a pull request which is accepted and processed successfully, his/her assignment submission is deemed to be complete.

You are also welcome to add references and cite them. Examples on how to do that are on the course repository [**?**].

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16 CH21B067

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20 ME21B060

20.1 what is a steady flow process

A steady flow process is a process in which matter and energy flow in and out of an open system at same rates.

20.2 Equation for steady Flow

$$`\dot{Q} - \dot{W} = \dot{m} * [(hi + vi^2/2 + gzi) - (he + ve^2/2 + gze)] \tag{1}$$

sr.no	variable	meaning
1	$\dot{Q}$	Rate of heat absorption by CV
2	$\dot{W}$	Rate of external work interaction
3	$\dot{m}$	Rate of mass entering into CV(kg/sec)
4	zi	height above the reference line for the inlet.
5	ze	Height above the reference line for an outlet.
6	vi	velocity of entering steam.
7	ve	velocity of leaving steam.
8	hi	enthalpy of entering steam.
9	he	enthalpy of outgoing stream.

20.3 Explanation

The steady flow energy equation (SFEE) is used for control volume system. To derive the equation few approximations are also taken into count. The incoming and outgoing mass rates are having the same value, Change in the total energy of a CV is assumed to be zero (0). In CV there is no mass accumulation due to mass flow. By assuming the inlet as state 1 and outlet as state 2 and by calculating the temperature and pressure at both states. We can find out the other thermodynamic properties of the CV such as work, heat transfer, enthalpy of incoming or outgoing flow.

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44 Conclusions

If this master tex file could be compiled successfully, it means that the class has learnt the concepts of Git as well as LaTeX properly.

45 References

References

[1] Repository for id2090 course. `https://github.com/gphanikumar/mm2090`. Accessed: 2022-06-13.