Entropy in the Carnot cycle

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- During which steps of the Carnot cycles operation is heat transferred between the gas in the cylinder and the external world?

- Does the entropy of the system change in all the steps of the Carnot cycle? If this is not the case during which stages of the engines operation is the engines operation is the entropy fixed?

- Draw a diagram showing the four transitions that occur inside the Carnot engine in the temperature-entropy plane.

- Explain in your own words why it is significant that the entropy returns to its original value when all four stages of the Carnot cycle are completed?

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- When the system is in contact with the heat bath at the higher temperature is any work transferred between the system and the environment? Explain your answer making reference to the changes in volume that happen during this part of the cycle.