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Statistics taken from 2002 in the United States showed that total open – heart surgeries summed to be approximately 709,000. 93,000 of these trials were related to valve replacement. 2,057 of these trials were heart transplants and 515,000 trials were related to bypass surgery. This is a huge number of serious cases where surgery is needed to be done with the most vital organ of the body. All of these cases require the use of a heart – lung machine (sometimes referred to as the pump oxygenator machine) and a perfusionist. A perfusionist is a member of a surgical team that maintains the functioning and monitoring of the heart – lung machine. The heart – lung machine itself is a machine that does the work of both the heart (pumps blood) and the lungs (oxygenates the blood). During surgery, blood returning to the heart is diverted through this machine before returning to arterial circulation. This allows surgeons time to work on the heart and also (in certain surgeries) makes it easier for the surgeon to work on or around the heart because it is not pumping. Before the invention of the heart – lung machine, no open-heart surgeries were ever successful. The first machine was developed in 1937 by Dr. Gibbon or John H. Gibbon and Thomas Watson.



Gibbon had been working on the idea of a machine that could take over the function of both the heart and the lungs so that the heart could easily be worked on. It wasn't until after World War II that Dr. Gibbon met up with the engineering chairman of IBM at the time, Thomas Watson. Watson contributed his engineering knowledge alongside with Dr. Gibbon's medical experience to develop the first heart – lung machine in 1937. Dr. Gibbon's proved how vital the machine could be on May 6th 1953 in Philadelphia. John H. Gibbon had performed the first successful open-heart surgery on an 18 year old girl as he closed a hole between the girl's upper heart chambers.

Sources:

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- [John H. Gibbon the Inventor of the First Successful Heart-Lung Machine](#), Pastuszko, Peter, Edie. Journal of Cardiac Surgery, Vol. 19 Issue 1.