

#### Case Steam Engine

Excerpt from *Pray's Steam Tables and Engine Constants: For Facilitating All Calculations Upon Indicator Diagrams, or Various Problems Connected With the Operation of the Steam Engine, From Reliable Data and With Precision*
The density of steam is correctly given in this volume, taking Prof. Rankine as reliable, and no one today has the abstract facts on that property of saturated steam to any greater certainty than he had, and up to date no one has given facts to consider in place of his reasoning, nor with any approximate basis beyond their own conception of what might be. The tables here given will, to some extent, increase the amount of steam used in any place, but it is correct from present knowledge, and with Regnault's observations and results, and Rankine's verifications of those same results, we must be put in possession of far more accurate data, than the suppositions of theorists, before we attempt to alter the Rankine basis, for saturated steam, for the simple, but indisputable reason that his basis was entirely from Regnault's actual experiments, in using steam, under practically the same conditions that steam engines use it in practical work, while the density is assumed to a great degree in any case, the basis herein adopted is assumed only so far as the higher pressures are given, it is almost positively known for some of the lower range. About the Publisher
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This historic book may have numerous typos and missing text. Purchasers can usually download a free scanned copy of the original book (without typos) from the publisher. Not indexed. Not illustrated. 1881 edition. Excerpt: ... rest, as was the case in the atmospheric engine, all the valves were thrown open and steam was blown through the engine to expel air from the cylinder, pipes, and condenser, and fill every part with steam. The equilibrium-valve was then closed, the steam and l See letter from Watt to Smeaton in 1778, in Farey on the Steam Engine, p. 329, note. exhaust valves being left open. The injection water being admitted into the condenser, the steam in the cylinder was destroyed, and a vacuum produced under the piston, whereupon the steam from the boiler, pressing upon its upper side, carried it to the bottom of the stroke. The steam and exhaust valves were then closed, and the equilibrium-valve was opened, thus allowing the steam to press equally on the upper and under sides of the piston; and the weight of the pump-rods, meeting with no resistance, carried the piston back to the top of the cylinder, the steam that was above it passing to its under side in the meanwhile. The equilibrium-valve was then closed, leaving the engine ready for another stroke, which ensued immediately upon the steam and exhaust valves being again opened. The steam was thus employed twice over, first above, and afterwards under, the piston, as is still the case in the Cornish pumping engine and other single-acting engines at the present day. CHAPTER XIII. Watt's Double-acting Engine, Or Engine OF RevOLution, FOR DRIVING MILL-WORK OF ALL KINDS. Reference has already been made to the attempts on the part of Watt to produce continuous motion round an axis, by means of an engine of the steamwheel class. In this he was unsuccessful. He was fully alive to the boundless field which existed for the application of an engine capable of producing a regular rotatory motion. It had...

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Excerpt from The Indicator and Dynamometer: With Their Pracical Applications to the Steam-Engine
The Indicator is one of Watt's inventions, upon which he was accustomed to place great reliance; and it may not, perhaps, be too much to say, that, in his hands, it contrib uted mainly to his successive improvements of the Steam engine. After his patent had expired, and the Engine had become public property, the various makers, it seems, did not at first sufficiently value this useful instrument for we find Farey, in his work on Steam, complaining that Steam-engines had rather retrograded from neglecting it. However that may be, such is not the case now; for every engine maker is careful to apply it, as the best means of testing the working condition of his engine; yet even now there are many classes of people connected with the Steam engine, such as officers commanding steam-vessels and en gineers, to whom a fuller description of the instrument. About the Publisher
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Case GP Tractors

Pray's Steam Tables and Engine Constants

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*Elmer's Engines*

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**Robert Henry Thurston's present book 'A History of the Growth of the Steam-Engine', as evident from the title itself, gives the history of the development and changes in the model of the steam engine. It was first published in the year 1886.**

***History and Description of the Steam Engine***

***Gas Review***

***One Hundred Patterns***

***Case Tractors***

***The Case of Boulton and Watt***

***The Story of the Steam Plough Works***

Excerpt from The Selection and Installation of Machinery for Small Pumping Plants
The brake horsepower (b. H. P.) is the power delivered by an engine to the belt that drives a pump, or to the pump itself in case the unit is direct connected. For steam engines it is usually about 90 per cent of the indicated horsepower and for gasoline engines about 80 per cent. The same idea is expressed also by saying the mechanical efficiency of the engine is 90 or 80 per cent. The indicated or rated horsepower (i. II. P.) of steam engines is based on the power developed in the cylinder. This can be determined in an actual case only by means Of a steam engine indicator. However, experiments made by engine builders enable them to tabulate with sufficient accuracy the rated horsepower for engines Of given size of cylinder, with a given steam pressure and a given number of revolutions. The practice of all builders is not the same in this particular. Some state that an overload of 25 per cent is allowable, while others give the maximum power the engine is capable of indicating. About the Publisher
Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at [www.forgottenbooks.com](http://www.forgottenbooks.com)
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This historic book may have numerous typos and missing text. Purchasers can usually download a free scanned copy of the original book (without typos) from the publisher. Not indexed. Not illustrated. 1912 edition. Excerpt: ...of the exhaust is entirely absent in the case of the una-flow engine, as the exhaust is controlled by the piston which always uncovers the same large area of exhaust port. This feature Stump/, The una-flow steam engine. 7 obviates the losses, produced in ordinary loco engines at light loads by the high counter pressures. It was demonstrated in the case of two una-flow express locomotives built by the Maschinenbau Anstalt Breslau to the order of the Prussian railways (see figure 124), that such engines run smoothly. This smooth running is due to the method of steam distribution. In order to show this clearer, the diagrams from a una-flow locomotive engine are shown alongside the diagrams from a counter flow engine in figure 116. In the case of the counter flow engine it is shown working with throttling and with full pressure. In the full pressure diagram, cut-off takes place after 17% of the stroke, whilst in the case of the throttle diagram the cut-off takes place after 31%. The cut-off for the una-flow engine is at 20% of the stroke. The inertia diagrams have been drawn for a speed of 110 km. and the rate of change of the pressure on the crank pin has been derived from the combination of the steam and inertia diagrams (Fig. 116, lower diagrams). The three upper diagrams, figure 117, show the rate of change of acceleration resulting from the effective pressure as a function of the time. It will be noticed that the curve of acceleration for the unaflow engine is very nearly level, whilst in the case of the counter flow engine there is a sharp change from positive to negative. This is due to the fact that in the counter flow engine, the change in the direction of the effort coincides with the dead centre, whilst in the case of the una-flow...

A Treatise on Engines and Boilers

A Popular and Descriptive Account of the Steam Engine

A History of the Growth of the Steam-Engine

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Steam to Diesel