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Reciprocating internal combustion engines — Definition of right-hand and left-hand single bank engines

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FOREWORD

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Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 2276 was drawn up by Technical Committee ISO/TC 70, *Internal combustion engines.*

It was approved in June 1971 by the Member Bodies of the following countries :

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Denmark

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Reciprocating internal combustion engines – Definition of right-hand and left-hand single bank engines

1 SCOPE AND FIELD OF APPLICATION

This International Standard gives the definition of right-hand and left-hand single bank reciprocating internal combustion engines, henceforth called single bank engines.

It does not apply to engines used to propel

– aircraft;
– automobiles and trucks;
– agricultural and industrial types of tractors;
– road construction and earth-moving machines;
– motor cycles.

NOTE – The definition of right-hand and left-hand single bank engines is determined in relation to the position of an observer, and only applies where the location of the exhaust pipes is on one side of the engine.

2 GENERAL DEFINITION

For the purpose of this International Standard the following general definition applies :

single bank reciprocating internal combustion engine : A reciprocating internal combustion engine having a number of working cylinders all located on one side of the crankshaft, and in which all the cylinder centre lines lie in one and the same plane, which usually contains the crankshaft.

3 POSITION OF THE OBSERVER

3.1 The position of the observer in relation to a single bank engine is considered to be in an extension of the axis of the shaft which provides the driving extremity, the observer directing his view towards this shaft extremity along the arrow V (see Figure 1).

This position applies equally to a single bank engine with an integral (built in) reversing gear, with or without speed variation, and to a single bank engine with an integral (built in) gear, with or without speed variation, only.

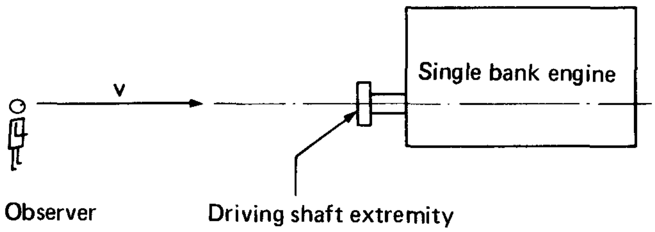

FIGURE 1 – **Position of the observer**

3.2 If the engine has more than one driving shaft extremity, the manufacturer shall state which shaft extremity is referred to when designating a single bank engine as right-hand or left-hand.

4 DEFINITION OF RIGHT-HAND AND LEFT-HAND SINGLE BANK ENGINES

For the definition of right-hand and left-hand single bank engines, the location of the exhaust pipes is the deciding factor.

NOTE – The use of the exhaust pipes as the datum for this designation applies only when there is one single set of exhaust pipes, the centre line of which does not lie in the plane which contains the cylinder centres. (The illustrations show one exhaust pipe only.)

4.1 SINGLE BANK ENGINES WITH VERTICAL CYLINDERS LOCATED ABOVE THE SHAFT WHICH PROVIDES THE DRIVING EXTREMITY

4.1.1 right-hand single bank engine (see Figures 2a and 2c) : Single bank engine having the exhaust pipes located to the right of the plane which contains the cylinder centres, as viewed from the observer's position described in 3.1.

4.1.2 *left-hand single bank engine* (see Figures 2b and 2d) : Single bank engine having the exhaust pipes located to the left of the plane which contains the cylinder centres, as viewed from the observer's position described in 3.1.

4.2 SINGLE BANK ENGINES WITH A CYLINDER ARRANGEMENT OTHER THAN THAT IN 4.1

A single bank engine in which the cylinders are not located in a vertical plane above the shaft which provides the driving extremity shall be given an imaginary rotation about the axis of this shaft until they are in such a position.

Then, in accordance with 4.1, the engine is designated according to the location of the exhaust pipes as a right-hand single bank engine (see Figures 3a, 3c and 3e) or a left-hand single bank engine (see Figures 3b, 3d and 3f).

NOTE – With opposed piston engines as shown in Figures 3e and 3f, the imaginary rotation of the engine about the axis of the shaft which provides the driving extremity shall be such that the cylinder parts *to which the exhaust pipes are connected* will be in a vertical position above this shaft.

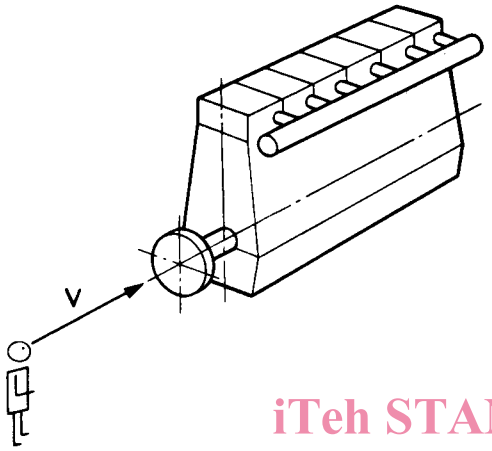

FIGURE 2a – **Right-hand single bank engine**

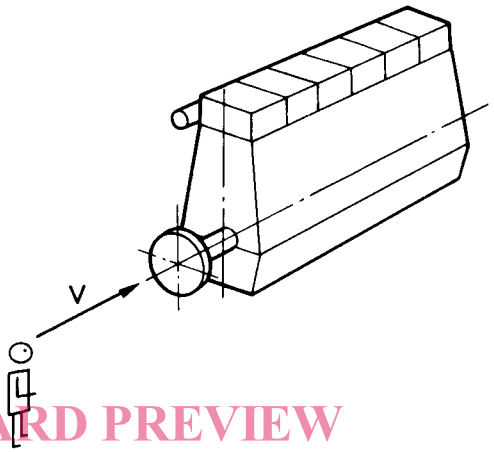

FIGURE 2b – **Left-hand single bank engine**

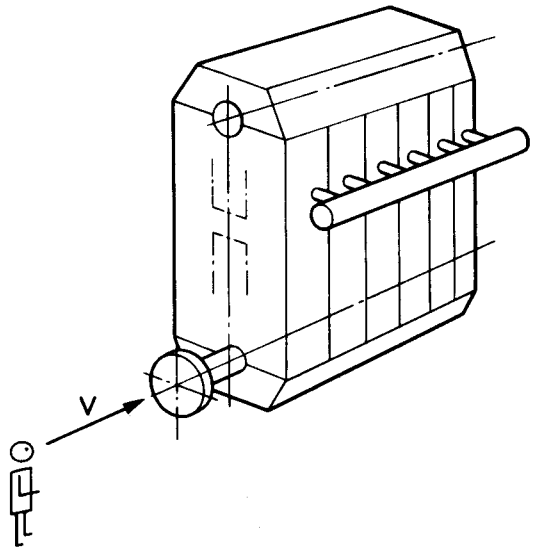

FIGURE 2c – **Right-hand single bank opposed piston engine**

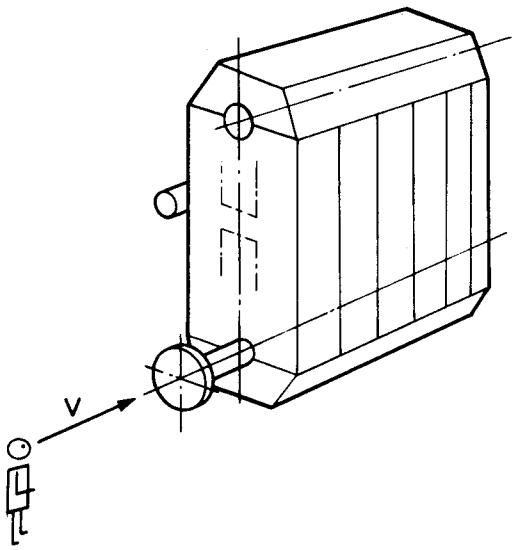

FIGURE 2d – **Left-hand single bank opposed piston engine**

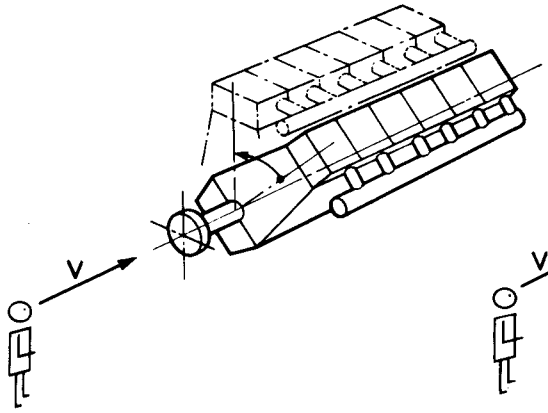

FIGURE 3a — **Right-hand single bank engine**

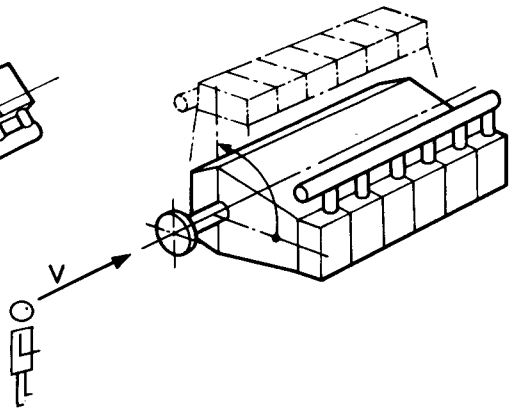

FIGURE 3b – **Left-hand single bank engine**

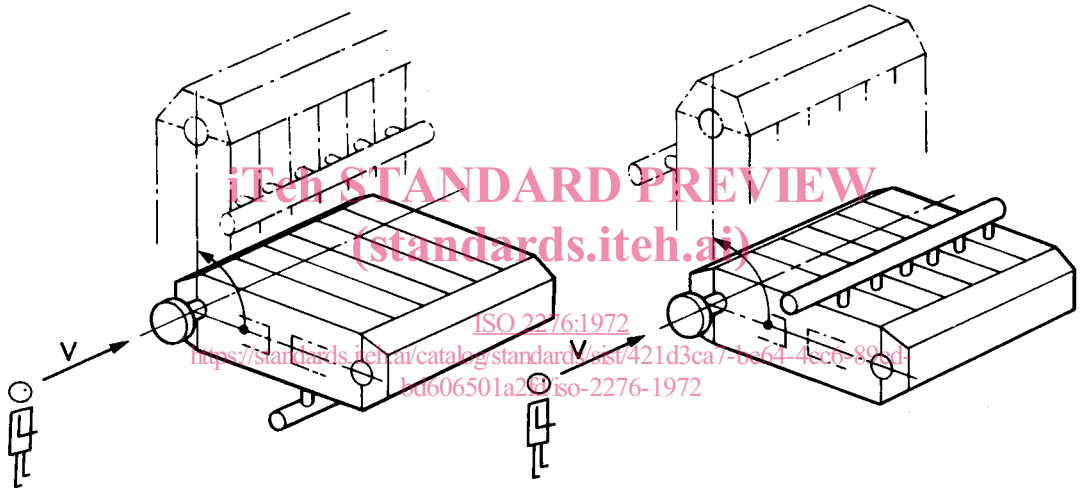

FIGURE 3c — **Right-hand single bank opposed piston engine** FIGURE 3d — **Left-hand single bank opposed piston engine**

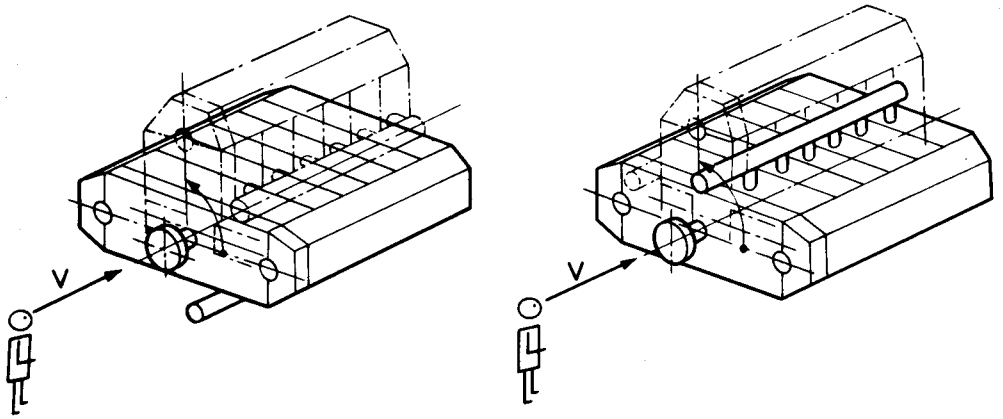

FIGURE 3e — **Right-hand single bank opposed piston engine** FIGURE 3f — **Left-hand single bank opposed piston engine**