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Reciprocating internal combustion engines — Vocabulary of components and systems —

Part 11: Fuel systems

Moteurs alternatifs à combustion interne — Vocabulary des composants et des systèmes —
Partie 11: Systèmes de carburant

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Foreword

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The committee responsible for this document is ISO/TC 70, *Internal combustion engines*.

ISO 7967 consists of the following parts, under the general title *Reciprocating internal combustion engines — Vocabulary of components and systems*:

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— *Part 1: Structure and external covers*

— *Part 2: Main running gear*

— *Part 3: Valves, camshaft drives and actuating mechanisms*

— *Part 4: Pressure charging and air/exhaust gas ducting systems*

— *Part 5: Cooling systems*

— *Part 6: Lubricating systems*

— *Part 7: Governing systems*

— *Part 8: Starting systems*

— *Part 9: Control and monitoring systems*

— *Part 10: Ignition systems*

— *Part 11: Fuel systems*

— *Part 12: Exhaust emission control systems*

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Reciprocating internal combustion engines — Vocabulary of components and systems —

Part 11: Fuel systems

1 Scope

This part of ISO 7967 establishes a vocabulary for fuel systems of reciprocating internal combustion engines. Also, in this part of ISO 7967, the terms and the definitions are classified as follows:

— fuel supply system (3.1);

— carburetor (3.2);

— fuel injection system (3.3).

ISO 2710-1 gives a classification of reciprocating internal combustion engines and denotes the basic terms and definitions of such engines and their characteristics.

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2 Normative references

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The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 7876-1:1990, *Fuel injection equipment — Vocabulary — Part 1: Fuel injection pumps*

ISO 7876-3:1993, *Fuel injection equipment — Vocabulary — Part 3: Unit injectors*

ISO 7876-5, *Fuel injection equipment — Vocabulary — Part 5: Common rail fuel injection system*

3 Terms and definitions

3.1 Fuel supply system

3.1.1
fuel supply system
system which consists of low pressure fuel equipment for delivering fuel from the fuel tank to the high pressure unit for fuel injection to the engine

3.1.2
fuel feed pump
low pressure pump delivering fuel from the tank through one or several filters, to the high-pressure-generating components

[SOURCE: ISO 7876-5:2004, 2.2]

3.1.3
fuel filter
filter to eliminate contamination in the fuel

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3.1.4
priming pump
pump to fill the fuel pipe at starting

3.2 Carburetor

3.2.1
carburetor
device which vaporizes fuel into charge air and also controls air-fuel ratio of the mixture

3.2.2
elementary carburetor
carburetor (3.2.1) without compensation device which consists of the main system, the float unit, the *venturi* (3.2.34), and the *throttle valve* (3.2.42)

3.2.3
float carburetor
carburetor (3.2.1) in which the fuel level is maintained at the constant level by the *float* (3.2.47) and the fuel is absorbed in the air by the vacuum pressure at the *venturi* (3.2.34)

3.2.4
electronic controlled carburetor
carburetor (3.2.1) which controls air-fuel ratio by the electronic circuit

3.2.5
air-fuel ratio feedback controlled carburetor
carburetor (3.2.1) which is equipped with the device for feedback control of air-fuel ratio

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3.2.6
fixed-venturi carburetor
carburetor (3.2.1) with fixed area venturi

3.2.7
variable venturi carburetor
carburetor (3.2.1) with variable area venturi

3.2.8
updraft carburetor
carburetor (3.2.1) with upward exit of air-fuel mixture

3.2.9
downdraft carburetor
carburetor (3.2.1) with downward exit of air-fuel mixture

3.2.10
horizontal carburetor
sidedraft carburetor
carburetor (3.2.1) with horizontal exit of air-fuel mixture

3.2.11
single-barrel carburetor
carburetor (3.2.1) with one set of *venturi* (3.2.34)

3.2.12
multi-barrel carburetor
carburetor (3.2.1) with more than two sets of *venturi* (3.2.34)

3.2.13
two-barrel carburetor
carburetor (3.2.1) with two sets of *venturi* (3.2.34)

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3.2.14
compound carburetor
multiple carburetor
multi-carburetor
carburetor system with more than two sets of independent *carburetors* (3.2.1) in which *throttle valves* (3.2.42) are linked so as to work simultaneously or in sequence

Note 1 to entry: The unit with two carburetors is called twin-carburetor.

3.2.15
two-stage carburetor
carburetor system with two *carburetors* (3.2.1) with different characteristics in which each *throttle valve* (3.2.42) works in sequence

Note 1 to entry: The carburetor which works first is called the primary carburetor and another is called the secondary carburetor.

3.2.16
float circuit
float system
mechanism which maintains the level of fuel in the *carburetor* (3.2.1)

3.2.17
main metering system
main circuit
high-speed system
high-speed circuit
circuit in the *carburetor* (3.2.1) where fuel flows continuously during normal engine operation, except idling

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3.2.18
slow speed system
idle system
idle circuit
circuit in the *carburetor* (3.2.1) where fuel flows at idling

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3.2.19
secondary idle system
secondary low speed system
circuit of the secondary *carburetor* (3.2.1) where fuel flows from the main fuel circuit when the opening of the *throttle valve* (3.2.42) is small

3.2.20
power system
full-power circuit
power enrichment system
circuit where additional fuel flows for the enrichment of air-fuel mixture at high power operation of the engine

3.2.21
starting system
choke system
system or a series of parts in the *carburetor* (3.2.1) which restricts the air flow in the *venturi* (3.2.34) at the starting of the engine

3.2.22
accelerating system
accelerator-pump system
circuit of additional fuel for the enrichment of air-fuel mixture at the sudden acceleration of the engine

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3.2.23
compensating device
device which adjusts air-fuel ratio in accordance with the requirement from the engine using a procedure such as *air bleed* (3.2.53) method

3.2.24
bore size of throttle-body flange
throttle-diameter
diameter of the exit of the *carburetor* (3.2.1) which indicates the size of the carburetor

Note 1 to entry: When the carburetor has two or more exits, the size is usually indicated by plural diameters.

3.2.25
carburetor body
main body of carburetor
body including main parts of the *carburetor* (3.2.1) such as *venturi* (3.2.34) and *float chamber* (3.2.44)

3.2.26
air intake body
body which forms *air intake* (3.2.28) passage with the *choke valve* (3.2.31)

3.2.27
flange body
throttle body
body which forms the exit of air passage with *throttle valve* (3.2.42)

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3.2.28
air horn
air intake
air intake portion of the *carburetor* (3.2.1)

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3.2.30
choke
choking
means to enrich the air-fuel mixture by choking the inlet of charge air to the *carburetor* (3.2.1)

3.2.31
choke valve
strangler valve
air shutter
valve for *choking* (3.2.30) the air inlet in the *carburetor* (3.2.1)

3.2.32
choke relief valve
valve equipped in the *choke valve* (3.2.31) which relieves charge air when air-fuel ratio exceeds the limit due to excessive negative pressure at the *venturi* (3.2.34)

3.2.33
automatic choke
device which operates *choke valve* (3.2.31) automatically depending on the temperature of the engine

3.2.34
venturi
venturi tube
nozzle (3.2.64) with throat which produces low pressure of charge air for fuel injection

3.2.35
venturi diameter
diameter of throat of *venturi* (3.2.34)

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3.2.36
single venturi
venturi (3.2.34) of one part

3.2.37
double venturi
unified *venturi* (3.2.34) from two venturis

3.2.38
triple venturi
unified *venturi* (3.2.34) from three venturis

3.2.39
primary venturi
smallest *venturi* (3.2.34) of *double venturi* (3.2.37) or *triple venturi* (3.2.38)

3.2.40
secondary venturi
venturi (3.2.34) larger than *primary venturi* (3.2.39) in *double venturi* (3.2.37) or *triple venturi* (3.2.38)

3.2.41
third venturi
largest *venturi* (3.2.34) of *triple venturi* (3.2.38)

3.2.42
throttle valve
throttle butterfly
part included in the *carburetor* (3.2.1) which controls the flow rate of air-fuel mixture into the engine

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3.2.43
air valve
air damper
damper which is equipped in the second stage of *two-barrel carburetor* (3.2.13) for the control of air-fuel mixture

3.2.44
float chamber
float bowl
chamber containing fuel with the *float* (3.2.47) which maintains the fuel level

3.2.45
float chamber vent
pipe or *hole* (3.2.67) to introduce air pressure into the upper space of the *float chamber* (3.2.44)

3.2.46
outer vent
float chamber vent (3.2.45) connected to the atmosphere

3.2.47
float
pontoon
part to maintain the level of fuel in the *float chamber* (3.2.44)

3.2.48
float valve
float needle valve
valve which detects the movement of the *float* (3.2.47) and controls the level of fuel in the *float chamber* (3.2.44)

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3.2.49
float-level height
distance of upper or lower surface of the *float* (3.2.47) from a certain reference surface of the *float chamber* (3.2.44)

3.2.50
fuel-level height
level of fuel measured from a certain reference surface of the *float chamber* (3.2.44)

3.2.51
jet
metering jet
metering orifice
<general term> orifice used in the *carburetor* (3.2.1) which controls fuel flow or air flow

3.2.52
fuel jet
petrol jet
fuel metering jet
jet (3.2.51) which controls the fuel flow

3.2.53
air jet
air bleed
well vent jet
jet (3.2.51) which controls bleed air flow

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3.2.54
needle jet
jet (3.2.51) with *jet needle* (3.2.55)

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3.2.55
jet needle
fine bar installed in the *hole* (3.2.67) of a *jet* (3.2.51) to control the passage area of the fluid

3.2.56
main jet
main-metering jet
jet (3.2.51) for the *main metering system* (3.2.17)

3.2.57
slow running jet
slow speed jet
idling jet
jet (3.2.51) for *slow speed system* (3.2.18)

3.2.58
secondary slow jet
jet (3.2.51) for *secondary idle system* (3.2.19)

3.2.59
power by-pass jet
power jet
jet (3.2.51) for *power system* (3.2.20)

3.2.60
power valve
power jet valve
valve to control the fuel flow of the *power system* (3.2.20)

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3.2.61
pump jet
accelerating pump jet
jet (3.2.51) in the *accelerating system* (3.2.22)

3.2.62
starting petrol jet
jet (3.2.51) for *starting system* (3.2.21)

3.2.63
main air bleed
main air jet
jet (3.2.51) which bleeds air from the *main metering system* (3.2.17)

3.2.64
nozzle
discharge jet
discharge tube
nozzle to discharge fuel into charge air flow

3.2.65
main nozzle
main discharge nozzle
nozzle (3.2.64) in the main metering system

3.2.66
pump discharge nozzle
nozzle (3.2.64) in the *accelerating system* (3.2.22)

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3.2.67
port
hole
hole (3.2.67) for injecting fuel on the air passage of *carburetor* (3.2.1)

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3.2.68
idle port
idle discharge hole
port (3.2.67) for *slow speed system* (3.2.18)

3.2.69
progression hole
secondary idle orifice
two-hole type *idle port* (3.2.68) located on the upper side of the air passage

3.2.70
primary idle orifice
idle discharge hole
two-hole type *idle port* (3.2.68) located on the lower side of the air passage

3.2.71
secondary throttle barrel by-pass hole
port (3.2.67) for *secondary idle system* (3.2.19)

3.2.72
starting mixture supply port
outlet for starting mixture
port (3.2.67) for *starting system* (3.2.21)

3.2.73
starting valve
valve which opens and closes the by-pass line to supply fuel rich mixture during starting of the engine

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