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Reciprocating internal combustion engines — Vocabulary of components and systems —

Part 3: Valves, camshaft drives and actuating mechanisms

Moteurs alternatifs à combustion interne — Vocabulaire des composants et des systèmes —

Partie 3: Soupapes, arbres à cames et mécanismes de commande

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 7967-3 was prepared by Technical Committee ISO/TC 70, *Internal combustion engines*.

This second edition cancels and replaces the first edition (ISO 7967-3:1987), which has been technically revised.

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

— *Part 1: Structure and external covers*

— *Part 2: Main running gear*

— *Part 3: Valves, camshaft drive 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*

Reciprocating internal combustion engines — Vocabulary of components and systems —

Part 3: Valves, camshaft drives and actuating mechanisms

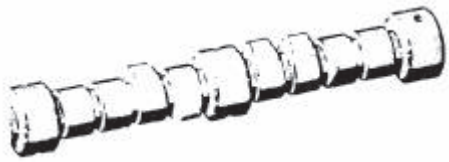
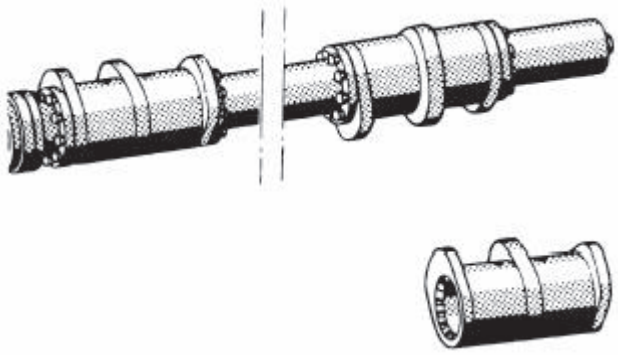
1 Scope

This part of ISO 7967 defines terms relating to the valves, camshaft drive and actuating mechanisms of reciprocating internal combustion engines.

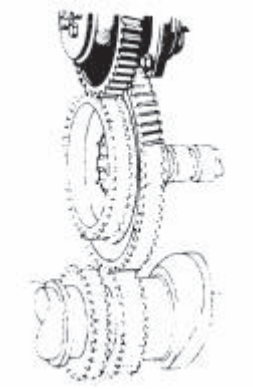
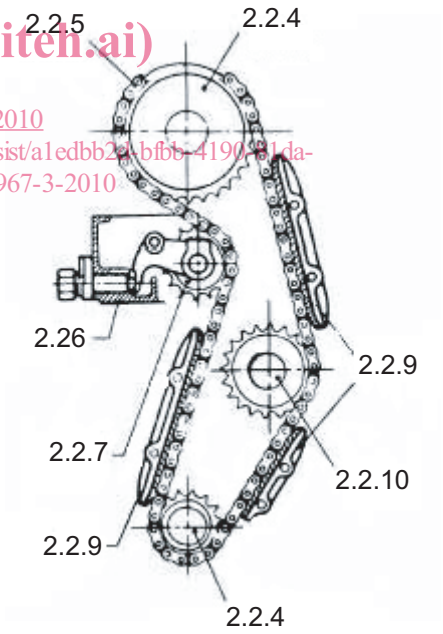
ISO 2710-1 gives a classification of reciprocating internal combustion engines and defines basic terms of such engines, their working and characteristics.

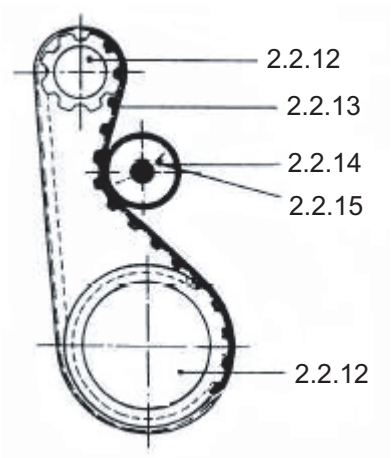
2 Definitions

2.1 Camshaft

Nº	Term	Definition	Illustration
2.1.1	**camshaft**	shaft incorporating cams which control the events of the working cycle (e.g. valve opening and closing timings, injection or ignition)	
2.1.2	**one-piece camshaft**	camshaft where cams and shaft are of one piece	
2.1.3	**assembled camshaft**	camshaft where cams and flanges are fitted onto the shaft	
2.1.4	**cam**	component by which valves or fuel injection pumps etc. are operated	

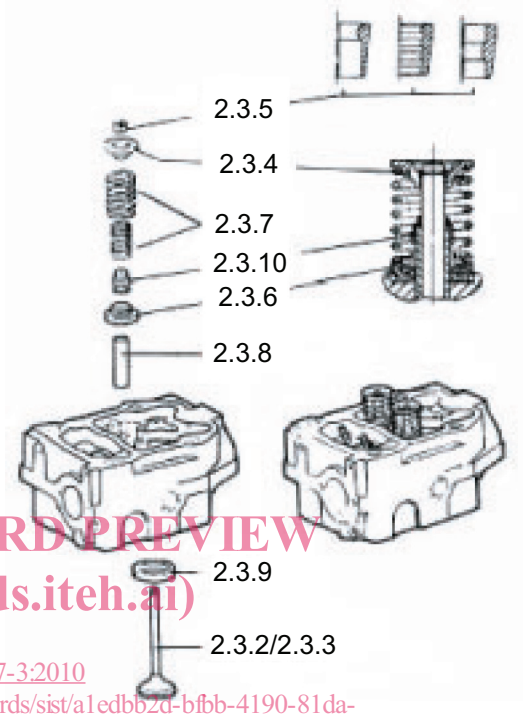
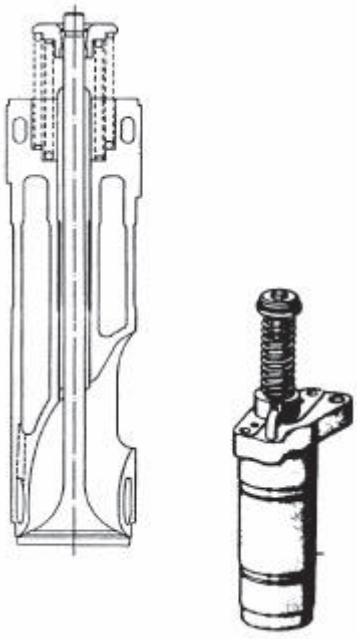
2.2 Camshaft drive

Nº	Term	Definition	Illustration
2.2.1	**camshaft drive**	mechanism by which the camshaft is rotated	
2.2.2	**gear drive**	crankshaft-to-camshaft drive by means of a series of gears	
2.2.3	**chain drive**	crankshaft-to-camshaft drive by means of sprocket wheels and timing chain	
2.2.4	**sprocket wheel**	wheel that drives or is driven by the timing chain	
2.2.5	**timing chain**	component to transmit movement from the crankshaft to the camshaft	
2.2.6	**chain tension adjuster assembly**	mechanism to compensate for the increase in length resulting from chain wear, using a tensioning wheel or a slide rail NOTE Actuation is by spring or hydraulic mechanism.	
2.2.7	**tensioning wheel**	wheel pressed against the chain to adjust its tension	
2.2.8	**slide rail**	rail pressed against the chain to adjust its tension	
2.2.9	**slide bars**	pair of components to absorb vibrations and to guide the chain	
2.2.10	**guide wheel**	wheel to guide the chain	
2.2.11	**synchronous belt drive**	crankshaft-to-camshaft drive by means of synchronous belt pulleys and belt	

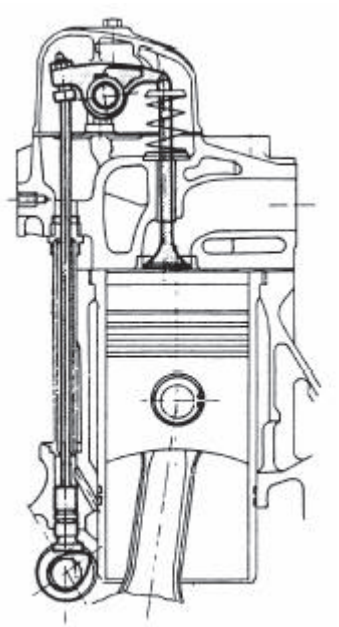
Nº	Term	Definition	Illustration
2.2.12	**synchronous belt pulley**	pulley that has teeth to mesh with the teeth of a synchronous belt	
2.2.13	**synchronous belt**	elastic endless toothed belt	
2.2.14	**belt tensioner**	mechanism to adjust tension in the belt	
2.2.15	**tensioning pulley**	pulley pressed against the belt to adjust its tension	

2.3 Valves

Nº	Term	Definition	Illustration
2.3.1	**valve** **poppet valve**	component consisting of stem, head and face (seat) which allows combustion gases to enter or leave the cylinder	

Nº	Term	Definition	Illustration
2.3.2	**inlet valve**	valve by which a fresh charge is admitted into the engine combustion chamber	
2.3.3	**exhaust valve**	valve by which the exhaust gases are discharged from the engine combustion chamber	
2.3.4	**valve spring retainer**	component used to hold the valve spring and to transmit spring force to the valve stem	
2.3.5	**valve collet valve key valve lock**	pair of components that hold the valve spring retainer on the valve stem	
2.3.6	**valve spring washer**	washer that prevents damage to the cylinder head	
2.3.7	**valve spring**	spring that closes the valve	
2.3.8	**valve guide**	component that guides the valve	
2.3.9	**valve seat insert**	replaceable valve seat in the cylinder head	
2.3.10	**valve stem seal**	seal between valve stem and valve guide located at the upper and/or lower end of the valve guide to prevent oil entering into cylinder head	
2.3.11	**valve cage**	component separate from the cylinder head into which the valve is fitted NOTE Cooled valve cages have the additional notation “cooled”.	

2.4 Actuating mechanism

Nº	Term	Definition	Illustration
2.4.1	**actuating mechanism**	components used to convert the rotary motion of the cam to the reciprocating motion of valves and fuel pumps	
2.4.2	**tappet**	device that bears on the cam and slides in a guide to transmit reciprocating motion	
2.4.3	**sliding tappet**	flat-faced tappet in sliding contact with the cam	
2.4.4	**roller tappet**	tappet that carries a roller that runs in contact with the cam