

of course, anticipated that many of the blank spaces on the classification sheets will become occupied in the course of time while others are doomed to remain blank since the required configurations and characteristics cannot be realised in practice.

## **2. Definition of parts**

A piston machine is a mechanism which contains a working chamber, surrounded by solid walls for the accommodation of liquid or gaseous working media. The chamber volume is varied by the relative movement of at least one part of the chamber wall with respect to the rest while maintaining efficient sealing contact. The moving part transmits energy either to or from the working medium and is here called a piston because it is best known as such from the reciprocating piston engine. If it forms part of a rotary mechanism it is defined as a rotor or rotary piston (RP). It is called a piston or rotor irrespective of its shape.

The containing chamber walls, which are not working parts, may also move relative to the piston or rotor in order to facilitate balancing or to escape from the path of the working parts. This kind of part is called a sealing component (SC) and is distinguished by the fact that although it is exposed to the working pressures it cannot exert any torque.

In the following sketches the power transmitting parts are coloured red, sealing components blue and stationary housing parts black. In some piston machines the function of output and sealing components may be performed by two components in alternative sequence. These components are logically coloured violet – a mixture of blue and red. Output or crankshafts are coloured yellow and sealing elements green.

A fixed centre of gravity of a moving part, or the centre of a shaft in a fixed bearing, is shown as a white point.

An orbiting centre of a moving part or the centre of a crank pin or eccentric is coloured blue, red or violet respectively depending on the coding colour of the engaging or meshing component (output or sealing member).

## **3. Power output members with reciprocating or unidirectional motion**

Piston machines are divided into two major groups according to the behaviour of the c.g. of the power output member and the method of chamber volume variation. That is, machines with reciprocating motion and those with unidirectional motion.

To the first category belong the reciprocating piston machines, in which the c.g. of the power transmitting part (piston) moves to and fro in a straight line or, if the cylinder is allowed to swing about a fixed centre, in a circular arc. In the case of a