

# ISO 6621-2:2020-03 (E)

## Internal combustion engines - Piston rings - Part 2: Inspection measuring principles

<b>Contents</b>		<b>Page</b>
Foreword .....		iv
Introduction .....		v
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Measuring principles .....</b>	<b>5</b>
4.1	General measuring conditions .....	5
4.2	Characteristics and measuring principles .....	6
4.2.1	Ring width .....	6
4.2.2	Radial wall thickness, $a_1$ .....	8
4.2.3	Total free gap $m, p$ .....	8
4.2.4	Closed gap, $s_1$ .....	9
4.2.5	Tangential force, $F_t$ (in Newton) .....	10
4.2.6	Diametral force, $F_d$ (in Newton) .....	15
4.2.7	Ovality, $U$ (in millimetres) .....	16
4.2.8	Point deflection, $W$ (in millimetres) .....	17
4.2.9	Light tightness (percentage of ring circumference) .....	17
4.2.10	Taper on peripheral surface (in micrometres or degrees) .....	18
4.2.11	Barrel on peripheral surface, $t_2, t_3$ (in millimetres) .....	18
4.2.12	Land width, $h_4, h_5$ (in millimetres) .....	20
4.2.13	Land offset (in millimetres) .....	21
4.2.14	Plating/coating thickness (in millimetres) .....	21
4.2.15	Nitrided case depth (in millimetres) .....	22
4.2.16	Keystone angle (in degrees) .....	22
4.2.17	Obliqueness (in degrees) .....	24
4.2.18	Twist (in millimetres) .....	25
4.2.19	Unevenness $T_e, T_u$ .....	26
4.2.20	Helix (axial displacement of gap ends) (in millimetres) .....	27
4.2.21	Free flatness (in millimetres) .....	27
4.2.22	Surface roughness $R_a, R_z$ (in micrometers) .....	28
4.2.23	Circumferential waviness – Bottom side face (in micrometers) .....	28
Bibliography .....		30