In (1) the rocking angles of the C atoms of the four-membered ring are smaller than unity due to fewer non-bonded repulsions between *trans*-vicinal substituents compared to the repulsion between *cis*-vicinal substituents [4·3 (4)° (Allen, 1984)].

As a result of the transannular distance 2·155 (2) Å in the cyclobutane, the seven-membered rings are strained. Both angles at the atoms C(3) and C(4) and the equivalent atoms exceed the angle at sp^2-C atoms of 120° significantly [124·1 (4) and 125·7 (2)°]. Therefore the biphenyl groups deviate from a linear arrangement as they do in the tetrabenzocyclododecene derivative (2) and its *cis–cis*- and *cis–trans*-isomers (Irngartinger, 1972, 1973*a*,*b*): the exocyclic bond angles at C(4), C(5), C(10) and C(11) [118·3 (3)°] are smaller than 120°. An angle of 169·9 (1) and 169·7 (1)° is given by the axes defined by the atoms C(4), C(27) and C(5), C(22) respectively and the corresponding axes in the second biphenyl group. The 1,4-distances C(16)···C(17) 2·841 (2) and C(24)···C(25) 2·857 (2) Å are much shorter than the corresponding distances C(3)···C(6) 3·167 (2) and C(9)···C(12) 3·168 (2) Å [van der Waals distance 3·4 Å (Pauling, 1976)].

In both biphenyl groups there are twists around the central bonds [C(3)–C(4)–C(5)–C(6) −14·9 (2), C(9)–C(10)–C(11)–C(12) 13·3 (2)°] with different sense of rotation, hence (1) is provided with a *meso*-conformation in the crystal and shows only small deviations from S_4 ($\bar{4}$) symmetry. These distortions bring about the different angles 112·0 (5) and 116·5 (6)° between the bonds from the aromatic rings to the cyclobutane system and the two adjacent bonds of the four-membered ring. The bond lengths [1·415 (2) Å; Fig. 1] between both substituted C atoms in the phenyl rings are the longest ones within the six-membered rings.

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