

**Declaration of manufacturer  
Mechanical Gears**

Series	<b>421F8..</b>
Test Lab / Client	Gerhard Geiger GmbH & Co.KG., Schleifmühle 6, 74321 Bietigheim-Bissingen, Germany
Standard	DIN EN 14203 (D) July 2004, Blinds and Shutters – Capability for use of gears with crank handle – Requirements and test methods

Test data

Family of products	<b>rolling shutter/awning (13659/13651)</b>		
Gear type	<b>worm gear</b>	Reduction ratio i	<b>8:1</b>
Torque $M_S$ [Nm]	<b>16</b>	Efficiency $\eta$ ( $M_S$ )	<b>0,39</b>

Test results

Forced operation test	<b>carried</b>		
Test effort $P_F$ [N]	<b>60 (10,8 Nm)</b> (Working radius 0,18m)		
Cycles	<b>50</b>	Passed	<b>Yes</b>

Number of achieved cycles	<b>10.000 (endurance class 3)</b>
---------------------------	-----------------------------------

This gear series is in conformity with the requirements of the directive DIN EN 14203 dated July 2004.

**Divergence from the norm:**

Due to the strong thermal load at the test rig, the outflow of tiny amounts of lubricants is unavoidable.

Bietigheim-Bissingen, 03.07.2014

  
Hans Michael Dangel (General Management)