

ECO 200

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Dokumentnummer	A33 – M02
Bezeichnung	Design Rules - ECO 200
Revision	3
Ersteller	Sven Klausnitzer Datum: 20.07.2016
Prüfer	Armin Anders Datum: 09.10.2017
Bemerkungen:	

**Änderungshistorie:**

Revision	Bearbeiter	Datum	Änderung
2	SK	20.07.2016	Format adoption, dust hint
3	SK	09.10.2017	Keep out area for magnets

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To enable the ECO 200 to fulfill its data sheet specified properties such as durability and long term energy output, some design rules must be observed when installing the application. The mechanical boundary conditions are shown in the drawings and 3D data of the installation instructions, key points are:

<b>Design rule</b>	<b>Important for / Refers to</b>	<b>Allowed tolerance</b>
Flatness of the rest of the designated contact surfaces	Prevent torsion of the ECO 200. Torsion can affect safe operation. Refers to ECO 200 installation instruction A33-M01 BL04 (rest surfaces, common tolerance range D or H)	+/- 0,05 mm
Backlash-free bracket	Ensure that the whole operating travel acts onto the leaf spring. Avoid dangling of ECO200.	+/-0 mm
Actuation of the leaf spring at the designated points	A shortening of the effective leaf spring length below the specified measure reduces the amount of energy and (in conjunction with the selected maximum travel) may also reduce the maximum number of operating cycles. Conversely, an extension of the effective leaf spring length acts positive onto energy output and number of cycles - it must be ensured, however, that the tension spring when operating close to the outer edge cannot slide out of the actuating fork. Refers to A33-M01 BL01	+/- 0,2 mm
Compliance with the minimum actuating travel of the leaf spring	Below the minimum switching point (spring travel) a safe operation and minimum number of cycles of the ECO 200 is not guaranteed Refers to A33-M01 BL01 View 6	> 1,82 mm
Compliance with the maximum actuating travel of the leaf spring	Above the maximum switching point (spring travel) a safe operation and minimum number of cycles of the ECO 200 is not guaranteed Refers to A33-M01 BL01 View 3	< 3,43 mm
Design of the actuating fork at the interface to the leaf spring	Design of this fork is the most important element to ensure the specified power output. In addition to compliance with the minimum fork opening with their tolerances the following factors have to be considered: <ul style="list-style-type: none"> <li>- When the leaf spring is biased, such that the turning point of the U-core is reached, U-core and leaf spring must be able to move without any hindrance. For this the minimum opening fork is a prerequisite, it must not be underrun.</li> <li>- Larger fork openings have a slightly beneficial effect on the energy output (up to about 0.7 mm) and can be used if the resulting increased operating travel is acceptable.</li> <li>- To achieve optimal performance a somewhat elastic construction (for example, is always given, when a button is pressed with a finger) should be used. This relationship can be used constructively by a slightly elastic actuating mechanism, if the resulting increased operating travel is acceptable.</li> </ul>	Fork opening >= 0,4 mm
Dust / particle protection	Avoid getting particles or dust (metallic or non metallic) into the ECO 200 mechanic. Magnetic particles will get absorbed by the magnetic system of ECO 200 and will instantly destroy the ECO function	Keep assembly process clean
Housing assembly	Avoid damage or break at assembly of the ECO 200 into the designed housing, a broken interface will lead to malfunction	A33-M01 BL04
External magnets/ ferromagnetic metal parts	Avoid ferromagnetic metal parts and permanent magnets close to the ECO 200 – realize a keep out sphere with diameter of 60mm in housing design	