Calculation and dimensioning

In order to guarantee the long life time of the shock absorber it must be correctly calculated and dimensioned. For that the following parameters must be considered:

- moving mass [kg]
- impact velocity of moving mass onto the shock absorber [m/s]
- additional acting propelling force, motor power or propelling torque [N, kW, Nm]
- number of parallel acting shock absorbers [n]
- number of strokes or cycles per hour [1/h]

**WARNING**

The shock absorbers have to be dimensioned in such a way that the calculated values do not exceed the maximum values of the individual capacity chart (see main catalogue):

\[ W, \text{ [Nm/stroke]} \]
\[ W, \text{ [Nm/h]} \]

**effective weight \( m_e \)** 
max. side load angle \( [\:] \)

To correctly calculate the shock absorber it must be the only active brake system in place. Additional deceleration systems, such as pneumatic cushioning, must be rendered ineffective and not to interfere with the shock absorber deceleration.

**Disposal of packaging:** Dispose packaging in an environmentally safe manner. The recycling of packaging saves raw materials and lowers the amount of waste. The used packaging materials do not contain illegal substances.

**Mounting:** In any position, but always so that the complete stroke can be used. The shock absorber is to be mounted so that the forces can be guided centrally via the piston rod. The maximum permissible side load (see main catalogue) may not be exceeded. An existing side load leads generally to a reduced lifetime. When exceeding the maximum permissible side load, a side load adaptor must be used.

**Operating temperature range:** -12 °C to 70 °C

**Self-Compensation:** MC-Series shock absorbers are self-compensating. Within a range selectable from a table they automatically compensate different force, weight, temperature and velocity impacts. By default, the shock absorbers are designed for five hardness ranges (me min. – me max.). The graduation goes from -0 (very soft) to -4 (very hard).

**EU Marking**

Starting with the production date September 2010 (Code IB or 10244) all shock absorbers are to be marked with an additional EU letter code in the identification number. The EU marking refers to the adherence to the required norms, laws, and guidelines of the EU. Only products marked with EU ensure the world wide standard and the guarantee for liability.

**Mounting with square flange QF**

Install with 4 machine screws

**Tightening torque:** 80 Nm

**Clamping torque:** > 90 Nm

**Mounting the shock absorbers in the tapped hole with two locking rings**

**Tightening torque:** 11 Nm

**Clamping torque:** > 90 Nm

**Screwing in the shock absorbers into a tapped hole with an additional locking ring**

**Tightening torque:** 80 Nm