

*Yellow, red, gray*



*What the colors of RG+ stand for*

## Table of content

<b>Gray – All-metal cushion as basis for every vibration damper .....</b>	<b>2</b>
<b>Red – Our pressure tension element, the allrounder.....</b>	<b>2</b>
<b>Orange – Weight bearing elements to stabilize your system .....</b>	<b>3</b>
<b>Yellow – Spring isolators for a low-frequency mounting .....</b>	<b>3</b>
<b>Rose – Machine feet for applications in mechanical engineering .....</b>	<b>4</b>
<b>Green – Merchandise as an addition to our standard portfolio .....</b>	<b>4</b>
<b>Wide product range for nearly every application .....</b>	<b>4</b>

Metal vibration dampers are a niche product. You, as a diligent reader of our new blog, have already read this out in our last article about the properties of knitted wire mesh. Nevertheless, even with this niche product, there are very many types of vibration dampers, which are used as machine mounts for a wide variety of applications. To make it easier to distinguish the vibration dampers internally, each type of damper was assigned a color in our company right from the start. Many of you may not consciously perceive this, but unconsciously colors play a very important role in our perception. One more reason to introduce you to the color world of RG+ and to present our product portfolio in more detail.

Yellow, red, gray - what do the colors of RG+ Schwingungstechnik stand for? The answer is simple and will now be explained in more detail. The colors stand for the different types of vibration dampers but read for yourself.

### Gray – All-metal cushion as basis for every vibration damper

The main element of the company RG+ Schwingungstechnik is the damping cushion made of stainless-steel wire. Like the stainless-steel itself, the damping cushion has a gray background. The knitted mesh is to be seen here as a single element. Depending on its size, it can support a static load in the range of 5 - 10,000 kg per element. Its parabolic load-displacement curve indicates that stiffness grows in the upper load range and so realizes a calm stand for applications at possible dynamic overloads. Typical applications are on-shore and off-shore turbine bearings, the decoupling of pipelines or gensets.

Elements with a gray background can also be machine buffers or collar bearing connections. Machine buffers are mainly used as decoupling elements for tread plates or as damping elements for cylinder and piston systems. Collar bearing connections are used in the rail industry for the storage of tanks, transformers or cooling units. Complete power packs or exhaust gas lines are also successfully decoupled by cushions with integrated collars. Their static load range is between 15 and 900 kg per element.

### Red – Our pressure tension element, the allrounder



There is hardly an area of application where pressure-tension elements of the GDZ series cannot be used - at least theoretically. As a standard element, the allrounder from RG+ is divided into a total of three different assemblies. Vibration dampers of the GDZ-()-1 series are basically to be loaded axially. The static load range here extends from 10 - 7,000 kg per element. Radial loads can be absorbed, but only to a limited extent. These elements are mainly used in the mounting of exhaust gas aftertreatment components. They are

used as vibration dampers for silencers, heat exchangers or catalytic converters in both stationary and transient processes. The application is simply bolted to the vibration damper to be fixed to the floor or ceiling to achieve successful decoupling.

Like Series 1 vibration dampers, Series GDZ-()-7 elements can also be decoupled by bolted connections. The major difference between the elements is that Series 7 vibration dampers can also be used for radial loads thanks to an additional cushion. This makes them particularly suitable for transient applications, for example in the railroad sector, as well as for applications where thermal expansion takes place in the system. Their static load range is between 60 and 3,500 kg per element. Both series are installed in a housing, so they are tear-resistant.

Contrary to the two series described above, GDZ-()-5 is equipped with a welding profile. This element can only be loaded axially and does not provide any damping in the radial direction. Accordingly, it must be carefully checked in advance whether a potential lateral force development occurs in the system. For applications that have to be designed statically once, where no lateral force effects occur and where there may be no possibility of bolting, these elements are to be preferred.

### Orange – Weight bearing elements to stabilize your system

If we now go a little further in the color wheel, orange follows. At RG+ Schwingungstechnik, orange stands for vibration dampers of the GAB series. These elements serve less for pure vibration damping, but rather for stabilizing your system. Thus, elements of the GAB series are often used for complete piping systems as track points. In combination with compensators and GDZ dampers, which act as fixed points, they are a very good solution for compensating thermal expansions.

Two standard forms of suspensions are available for this purpose. The first variant are stabilizers of the GAB-()-2 series, which are provided at both ends with a clevis including a pin and split pin for securing. Series 5, like the same series of weight bearing elements, offers a weld-on profile on one side.

The length of all types of weight-bearing elements can be individually adjusted to customer requirements. Minor height adjustments can be made by means of the integrated turnbuckle and the unused thread length. In this way, possible measurement uncertainties and length tolerances can be easily and quickly compensated on site. The static load range of these suspensions is between 150 and 5,000 kg per element as standard.

### Yellow – Spring isolators for a low-frequency mounting



Spring isolators for machine mountings with a natural frequency below 9 Hz are highlighted in yellow. These elements are available in many designs, always depending on the load range and the respective excitation frequency of the system. Standard spring elements are available in the natural frequency ranges 3-4, 5-6 and 7-9 Hz. The load ranges here are in the range of 5 - 42,000 kg per element.

All spring isolators can also be provided with an integrated damping cushion to minimize system buildup in the resonance range. The cushions serve as an additional safeguard in the event of dynamic overload. They prevent block formation and thus potential damage to the spring. Spring isolators with a natural frequency of 3-4 Hz can be supplied with a viscous fluid as a damping medium. A static load range of between 400 and 3,200 kg per element applies to these elements.

Spring isolators are mainly used in the field of mechanical process engineering, e.g. for the mounting of presses, mixers or crushers. Complete motors or generators as well as turbines can also be mounted on spring isolators. Since springs are not designed for lateral loads in most cases, they can only be used for stationary applications. For transient processes or applications with high lateral forces, additional mechanical stops must be installed to limit lateral movement.

## **Rose – Machine feet for applications in mechanical engineering**

Machine feet are the elements closest in design to our main product, the stainless-steel damping cushion. They are covered with pink and offer a static load capacity of 50 - 10,000 kg depending on the specific element.

Machine feet of the GMF-()-1 series have an integrated cushion seat, which has an indentation for screw fastening. These elements are suitable for easy installation of machine tools on flat surfaces. For uneven surfaces, adjustable feet of the GST-()-1 series are suitable. These offer an additional bell, through which a height adjustment can be made to a small extent. Machine and leveling feet of series 1 can be equipped with a different number of damping cushions. Straight variants with two or three cushions can be used for smaller presses or punches. Use as a mechanical stop for lateral forces is also possible.

Machine feet of the GMF-()-4 series are typical press dampers. These elements are available in variants with one and two damping pads. Unlike the GMF-()-1 and GST-()-1 vibration dampers described above, they are to be bolted firmly to the base. Nevertheless, like the other elements of this color series, they can be loaded only by pressure.

## **Green – Merchandise as an addition to our standard portfolio**

Green stands for vibration dampers as pure commodity. In the field of trade goods, we offer elastomer dampers, as well as compensators or shock absorbers. Calculations of these elements are not made, so inquiries of this kind are processed only on exact customer request.

## **Wide product range for nearly every application**

RG+ Schwingungstechnik offers a wide range of vibration dampers for a large number of machines and apparatus. Even if these elements differ in their characteristics from the standard elastomer-based products, their fields of application are comparable.

If you have any questions, please contact us directly at our general address. Likewise, your personal technical contact is always available for the design of the perfect vibration decoupling bearing by means of vibration dampers from our company.

**RG+ Schwingungstechnik GmbH**

[www.rgplus.de/en](http://www.rgplus.de/en)

Steiger-Stein-Str. 3

D-44805 Bochum

Tel.: +49 234 516208 0

Fax.: +49 234 516208 29

[info@rgplus.de](mailto:info@rgplus.de)

Bochum, 07.11.2022