Technical data and guidelines for the choice

Basic data required

- disturbing frequency: the frequency of the disturbing vibration produced by a on-duty machine. In general, it is obtained by the number of rotations of the engine [Hz=r.p.m./60];
- the load applied to every single vibration-damping element [N];
- the isolation degree required [%];
- the deflection value of the vibration-damping element under a given load [mm];
- the rigidity [N/mm], that is to say the load that applied to the vibration-damping element produces a deflection of 1.0 mm.

For DVA.6 and DVA.7 the non-linear progress of the rigidity as reported in the graphs.

How to choose the vibration-damping element

- with reference to the diagram for checking the isolation degree, intersect the disturbing frequency value with the isolation degree required (each isolation degree corresponds to a line in the diagram) and define the deflection [in mm];
- divide the load applied onto the vibration-damping element by the deflection value to obtain the required rigidity of the vibration-damping element;
- compare the rigidity obtained with the rigidity shown in the table and choose the vibration-damping element which presents the nearest value (lower) to the calculated one.

Check

- the deflection of the vibration-damping element chosen can be obtained in the graphs (DVA.6-DVA.7) on the basis of the load;
- intersect the disturbing frequency value with the vibration-damping element deflection value in the diagram to obtain the isolation degree offered by the vibration-damping element chosen;
- compare the obtained value with the isolation degree required.

Example

Conditions of use:
- disturbing frequency= 50 Hz (3,000 r.p.m.);
- load applied on each vibration-damping element 120 N;
- 90% isolation required;
- diagram shows that with a 50 Hz disturbing frequency and an isolation degree of 90%, the deflection obtained is 1.0 mm;
- divide the load applied by the deflection obtained to define the rigidity required, which is 120/1.0 = 120 N/mm;
- compare the rigidity value obtained (120 N/mm) with the values reported in the table;
- the values reported in table, for type DVA.1, show that the vibration-damping element which should be used is DVA.1-25-20-M6-18-55.
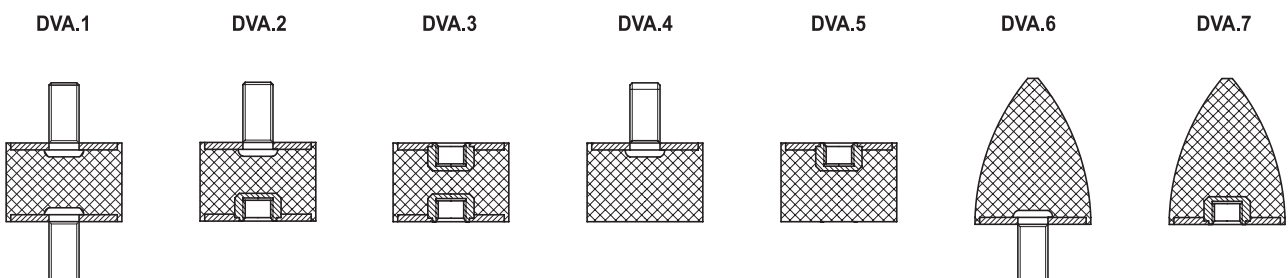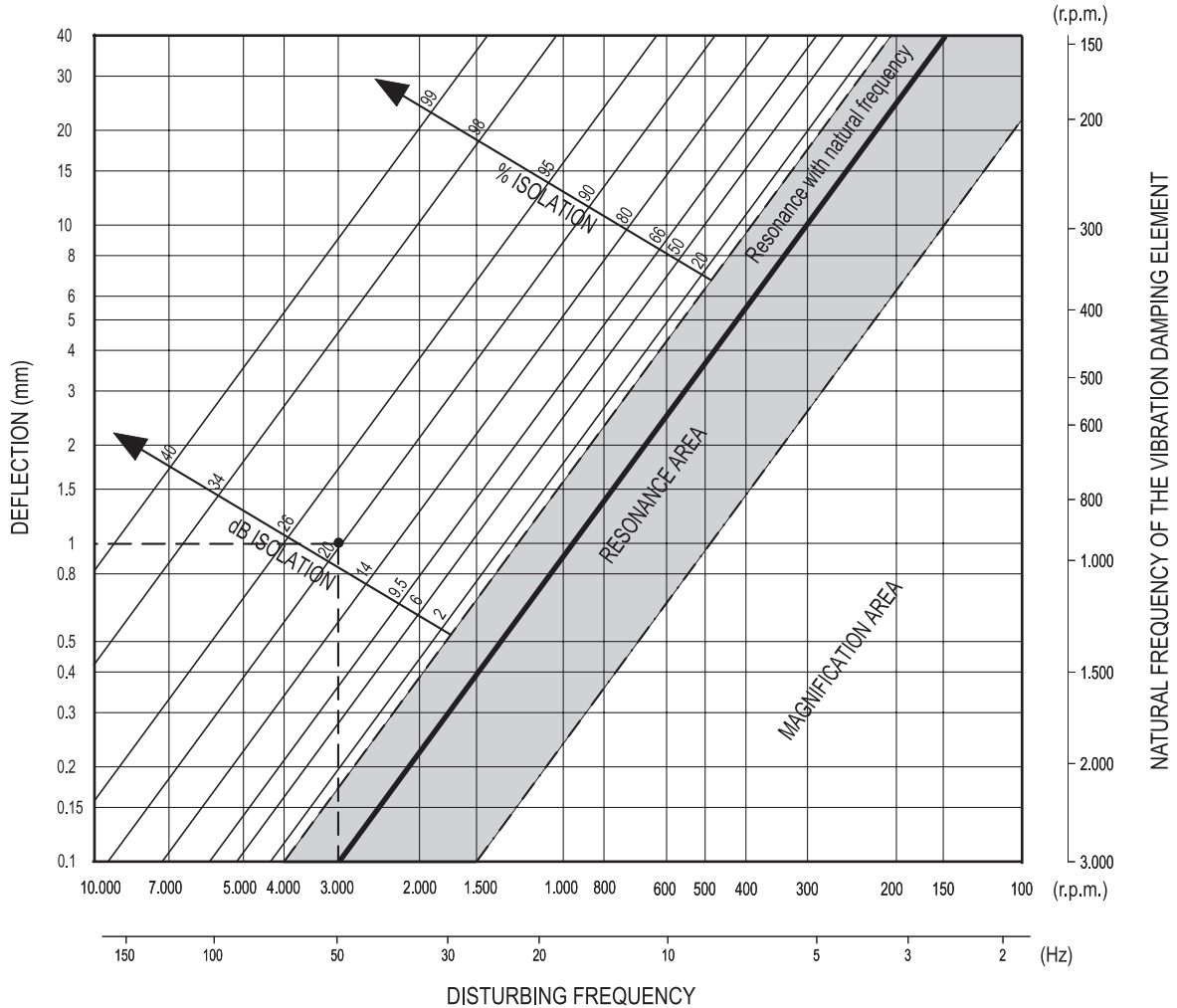
DVA.1	DVA.2	DVA.3	DVA.4	DVA.5	DVA.6	DVA.7

Diagram for checking the isolation degree of the vibration-damping element

DEFLECTION (mm)

% ISOLATION

dB ISOLATION

RESONANCE AREA

MAGNIFICATION AREA

Resonance with natural frequency

(r.p.m.)

NATURAL FREQUENCY OF THE VIBRATION DAMPING ELEMENT

DISTURBING FREQUENCY

(Hz)

Graphs (DVA.6 - DVA.7)

Load [N] — DVA. 20-24 — Deflection [mm]

Load [N] — DVA. 35-40 — Deflection [mm]

Load [N] — DVA. 30-30 / DVA. 30-36 — Deflection [mm]

Load [N] — DVA. 50-61 / DVA. 50-68 — Deflection [mm]

3

elesa