

## Profile Dampers TR, Radial Damping

**Material:** Co-Polyester Elastomer.

Maintenance-free, self-contained damping element. The radial deformation provides a very soft deceleration with a progressive energy absorption towards the end of the stroke. The excellent temperature characteristic of the material provides consistent damping performance over a temperature range of  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ . The low installed weight, the economic price and the long operating life of up to 1 million cycles makes this an attractive alternative to hydraulic end position damping, if the moving mass does not need to stop in an exact datum position and it is not necessary to absorb 100% of the incoming energy. The life cycle is up to 20 times longer than for urethane dampers and up to ten times longer than for rubber.

**Environment:** Resistant to oil, grease seawater and to microbe or chemical attack. Excellent UV and ozone resistance. Material does not absorb water or swell.

**Dynamic Force Range:** 218 N to 7,500 N.

**Temperature Range:**  $-40^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ .

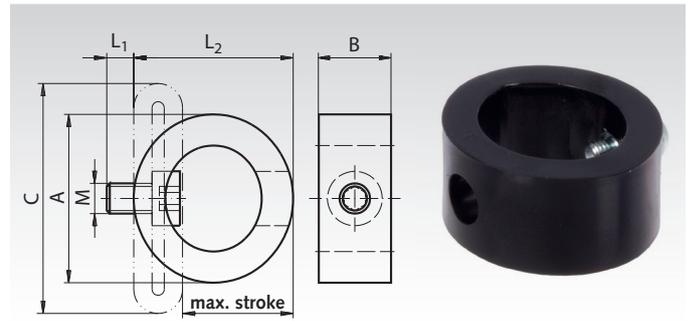
**Energy Absorption:** 25% to 45%.

**Material Hardness:** Shore 40D.

**Ordering Details:** e.g.: Product No. 691 229 00, Profile Damper TR 29-17

Product No.	Type mm	$W_3^{1)}$ Nm/Stroke	$W_{3\text{max}}^{2)}$ Nm/Stroke	max. Stroke mm	A mm	B mm	C mm	$L_1$ mm	$L_2$ mm	M Thread	Weight g
691 229 00	29-17	1,2	1,8	17	29	13	38	5	25	M5	10
691 237 00	37-22	2,3	5,4	22	37	19	50	5	32	M5	13
691 243 00	43-25	3,5	8,1	25	43	20	58	5	37	M5	17
691 250 00	50-35	5,8	8,3	35	50	34	68	5	44	M5	25
691 263 00	63-43	12	17	43	63	43	87	5	55	M5	51
691 267 00	67-40	23	33	40	67	46	88	5	59	M5	89
691 276 00	76-46	34,5	43	46	76	46	102	6	67	M6	104
691 283 00	83-50	45	74	50	83	51	109	6	73	M6	142
691 285 00	85-50	68	92	50	85	68	111	8	73	M8	206
691 293 00	93-57	92	122	57	93	83	124	8	83	M8	297
691 295 00	100-60	115	146	60	100	82	133	8	88	M8	308

<sup>1)</sup> Max. energy capacity per cycle for continuous use. <sup>2)</sup> For a single cycle, e.g. an emergency stop.



**Mounting:** in any position. **Impact Velocity range:** up to max. 5 m/s.

**Mounting Bolt Torque:**

M5: 4 Nm

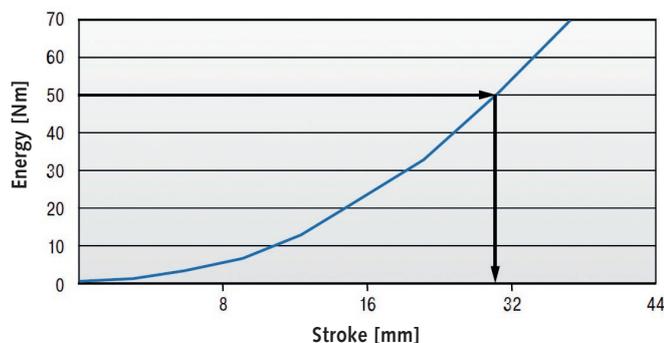
M6: 6 Nm

M8: 20 Nm

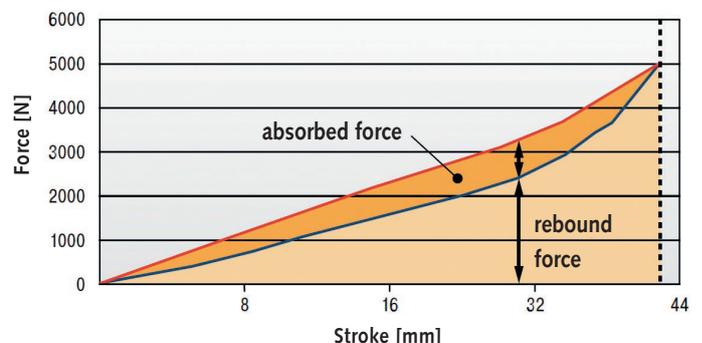
**On request: special strokes, characteristics, spring rates, sizes and materials.**

### Characteristics of Product No. 691 293 00

Energy-Stroke Characteristics (dynamic)



Force-Stroke Characteristics (dynamic)



With aid of the characteristics curves above you can determine the amount of energy that will be absorbed.

Example: Energy to be absorbed 50 Nm = stroke needed 31 mm see chart energy-stroke characteristic. The energy stroke chart serves to determine the absorbed or rebound energy at a given stroke length.

**Dynamic ( $v > 0.5$  m/s) and static ( $v \leq 0.5$  m/s) characteristics for all types available on request.**