

# TUBUS TR-L

## Profile Dampers

### Powerhouse in long body length

Especially for applications with long and soft deceleration: The radial tube dampers TR-L from the ACE TUBUS-Series are maintenance-free, ready-to-install elements made of co-polyester elastomer.

Their radial load offers designers a very long and soft deceleration with a progressive reduction in energy at the end of the stroke. The TR-L-Series has been specially developed for a maximum stroke with a minimum height and a range of 7.2 Nm to 10,780 Nm. The absorption capacity is dependent on the length of the selected tube damper. These models are available in sizes between Ø 29 mm and Ø 188 mm.

The TUBUS TR-L is used where impact or collision protection is necessary along a straight line e.g. on shovels in mining equipment, loading and lifting devices, dock systems in shipbuilding or luggage and transport belts.



### Technical Data

**Energy capacity:** 7.2 Nm/Cycle to 10,780 Nm/Cycle

**Energy absorption:** 26 % to 41 %

**Dynamic force range:** 1,312 N to 217,700 N

**Operating temperature range:** -40 °C to +90 °C

**Construction size:** 29 mm to 188 mm

**Mounting:** In any position

**Material hardness rating:** Shore 55D

**Material:** Profile body: Co-Polyester Elastomer

**Environment:** Resistant to microbes, seawater or chemical attack. Excellent UV

and ozone resistance. Material does not absorb water or swell.

**Impact velocity range:** Max. 5 m/s

**Torque max.:**

M5: 3 Nm

M8: 20 Nm

M16: 40 Nm (DIN912)

M16: 120 Nm (shouldered screw)

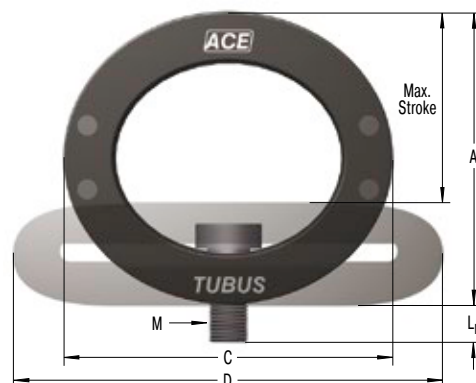
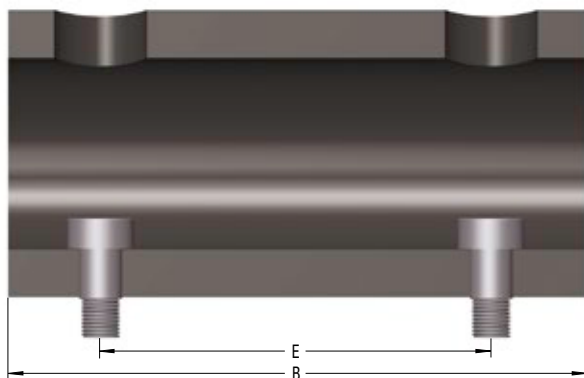
**Application field:** Offshore industry, Agricultural machinery, Impact panels, Conveyor systems

**Note:** Suitable for emergency stop applications and for continuous use. For applications

with preloading and increased temperatures please consult ACE.

**Safety instructions:** Mounting screw should additionally be secured with Loctite.

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

**Radial Damping, Long Version**
**TR-L**


The calculation and selection of the most suitable damper should be carried out or be approved by ACE.

**Ordering Example**
**TR66-40L-2**

TUBUS Radial \_\_\_\_\_  
 Outer-Ø 66 mm \_\_\_\_\_  
 Stroke 40 mm \_\_\_\_\_  
 Long Version \_\_\_\_\_  
 Length 2 = 305 mm \_\_\_\_\_

**Performance and Dimensions**

TYPES	Emergency stop		Stroke max. mm	A mm	B mm	C mm	D mm	E mm	L <sub>M</sub> mm	M	Weight kg
	<sup>1</sup> W <sub>0</sub> Nm/cycle	W <sub>0</sub> Nm/cycle									
TR29-17L	7.2	10.9	17	25	80	29	38	40	5	M5	0.044
TR43-25L	14.0	32.7	25	37	80	43	58	40	5	M5	0.072
TR63-43L	21.9	32.0	43	55	80	63	87	40	5	M5	0.106
TR66-40L-1	102.0	143.0	40	59	152	66	87	102	8	M8	0.027
TR66-40L-2	204.0	286.0	40	59	305	66	87	254	8	M8	0.580
TR66-40L-3	306.0	428.0	40	59	457	66	87	406	8	M8	0.830
TR66-40L-4	408.0	571.0	40	59	610	66	87	559	8	M8	1.130
TR66-40L-5	510.0	714.0	40	59	762	66	87	711	8	M8	1.330
TR76-45L-1	145.0	203.0	45	68	152	76	100	102	8	M8	0.380
TR76-45L-2	290.0	406.0	45	68	305	76	100	254	8	M8	0.696
TR76-45L-3	435.0	609.0	45	68	457	76	100	406	8	M8	1.130
TR76-45L-4	580.0	812.0	45	68	610	76	100	559	8	M8	1.430
TR76-45L-5	725.0	1,015.0	45	68	762	76	100	711	8	M8	1.780
TR83-48L-1	180.0	252.0	48	73	152	83	106	102	8	M8	0.480
TR83-48L-2	360.0	504.0	48	73	305	83	106	254	8	M8	0.930
TR83-48L-3	540.0	756.0	48	73	457	83	106	406	8	M8	1.380
TR83-48L-4	720.0	1,008.0	48	73	610	83	106	559	8	M8	1.810
TR83-48L-5	900.0	1,260.0	48	73	762	83	106	711	8	M8	2.260
TR99-60L-1	270.0	378.0	60	88	152	99	130	102	16	M16	0.790
TR99-60L-2	540.0	756.0	60	88	305	99	130	254	16	M16	1.290
TR99-60L-3	810.0	1,134.0	60	88	457	99	130	406	16	M16	1.940
TR99-60L-4	1,080.0	1,512.0	60	88	610	99	130	559	16	M16	2.660
TR99-60L-5	1,350.0	1,890.0	60	88	762	99	130	711	16	M16	3.100
TR99-60L-6	1,620.0	2,268.0	60	88	914	99	130	864	16	M16	3.700
TR99-60L-7	1,890.0	2,646.0	60	88	1,067	99	130	1,016	16	M16	4.300
TR143-86L-1	600.0	840.0	86	127	152	143	191	76	22	M16	1.440
TR143-86L-2	1,200.0	1,680.0	86	127	305	143	191	203	22	M16	2.900
TR143-86L-3	1,800.0	2,520.0	86	127	457	143	191	355	22	M16	3.880
TR143-86L-4	2,400.0	3,360.0	86	127	610	143	191	508	22	M16	5.290
TR143-86L-5	3,000.0	4,200.0	86	127	762	143	191	660	22	M16	6.590
TR143-86L-6	3,600.0	5,040.0	86	127	914	143	191	812	22	M16	7.890
TR143-86L-7	4,200.0	5,880.0	86	127	1,067	143	191	965	22	M16	9.190
TR188-108L-1	1,100.0	1,540.0	108	165	152	188	245	76	26	M16	2.340
TR188-108L-2	2,200.0	3,080.0	108	165	305	188	245	203	26	M16	4.640
TR188-108L-3	3,300.0	4,620.0	108	165	457	188	245	355	26	M16	6.890
TR188-108L-4	4,400.0	6,160.0	108	165	610	188	245	508	26	M16	9.190
TR188-108L-5	5,500.0	7,700.0	108	165	762	188	245	660	26	M16	11.390
TR188-108L-6	6,600.0	9,240.0	108	165	914	188	245	812	26	M16	13.640
TR188-108L-7	7,700.0	10,780.0	108	165	1,067	188	245	965	26	M16	15.940

<sup>1</sup> Max. energy capacity per cycle for continuous use.