The **Radial Tube Damper Type TR-L** from the innovative ACE TUBUS series is a maintenance free, self-contained damping element made from a special Co-Polyester Elastomer. The radial deformation of the TR-L series provides a very long and 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°C to 90°C. The tube damper has been specially developed for applications that require very low reaction forces. The actual force generated depends upon the length of the tube damper chosen. The TUBUS TR-L type is suitable for a wide range of applications that require protection from shock or impact anywhere along a straight line. Typical applications include mining equipment, dockyard handling equipment and on baggage handling and conveyor systems. The special stepped mounting screws supplied make installation very quick and simple. The TR-L series have been developed to provide **maximum stroke** in the **minimum mounting space**.

Life expectancy is extremely high: up to **twenty times** longer than for urethane dampers, up to **ten times** longer than rubber buffers and up to **five times** longer than steel springs.

Overload capacity: For emergency use only (1 cycle) it is possible to exceed the W_3 rating by +40 %.

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

Dynamic force range: 6 800 N to 286 000 N

Temperature range:
-40°C to 90°C

Material: Shore 40D hardness.

Energy absorption:
14 % to 26 %

Mounting: in any position

Impact velocity range:
up to max. 5 m/s

Mounting screw torque:
M5: 6 Nm
M8: 25 Nm
M16: 210 Nm

On request: special strokes, -colours, -sizes and materials.

Calculation and selection to be approved by ACE.

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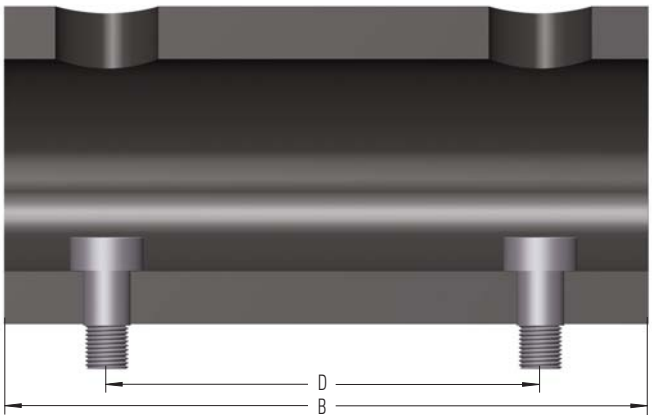

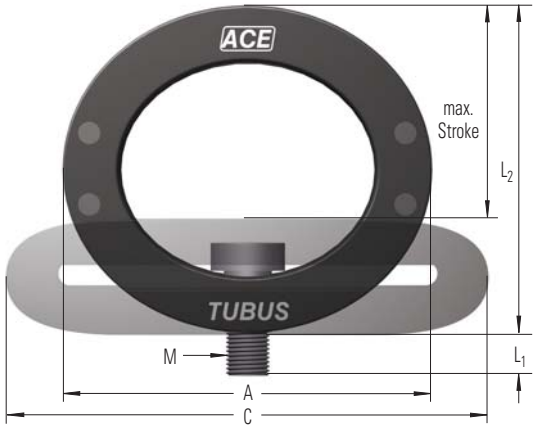

Ordering Example TR 66-40L-2

TUBUS radial long
Outer-ø 66 mm
Stroke 40 mm
Length 2 = 305 mm

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

Dimensions and Capacity Chart

Type	*W_3 Nm/cycle	max. Stroke mm	A	B	C	D	M	L_1	L_2	Weight in kg
TR 29-17L	12	17	29	80	38	40	M5	5	25	0.06
TR 43-25L	16	25	43	80	58	40	M5	5	37	0.06
TR 63-43L	30	43	63	80	87	40	M5	5	55	0.10
TR 66-40L-1	100	40	66	152	87	102	M8	8	59	0.25
TR 66-40L-2	200	40	66	305	87	254	M8	8	59	0.55
TR 66-40L-3	300	40	66	457	87	406	M8	8	59	0.80
TR 66-40L-4	400	40	66	610	87	559	M8	8	59	1.10
TR 66-40L-5	500	40	66	762	87	711	M8	8	59	1.30
TR 76-45L-1	135	45	76	152	100	102	M8	8	68	0.35
TR 76-45L-2	270	45	76	305	100	254	M8	8	68	0.70
TR 76-45L-3	400	45	76	457	100	406	M8	8	68	1.10
TR 76-45L-4	535	45	76	610	100	559	M8	8	68	1.40
TR 76-45L-5	670	45	76	762	100	711	M8	8	68	1.70
TR 83-48L-1	155	48	83	152	106	102	M8	8	73	0.45
TR 83-48L-2	315	48	83	305	106	254	M8	8	73	0.90
TR 83-48L-3	470	48	83	457	106	406	M8	8	73	1.35
TR 83-48L-4	625	48	83	610	106	559	M8	8	73	4.80
TR 83-48L-5	780	48	83	762	106	711	M8	8	73	2.25
TR 99-60L-1	205	60	99	152	130	102	M16	16	88	0.60
TR 99-60L-2	410	60	99	305	130	254	M16	16	88	1.10
TR 99-60L-3	615	60	99	457	130	406	M16	16	88	1.75
TR 99-60L-4	820	60	99	610	130	559	M16	16	88	2.35
TR 99-60L-5	1025	60	99	762	130	711	M16	16	88	2.90
TR 99-60L-6	1230	60	99	914	130	864	M16	16	88	3.50
TR 99-60L-7	1435	60	99	1067	130	1016	M16	16	88	4.10
TR 143-86L-1	575	86	143	152	191	76	M16	16	127	1.25
TR 143-86L-2	1155	86	143	305	191	203	M16	16	127	2.50
TR 143-86L-3	1730	86	143	457	191	355	M16	16	127	3.80
TR 143-86L-4	2305	86	143	610	191	508	M16	16	127	5.10
TR 143-86L-5	2880	86	143	762	191	660	M16	16	127	6.40
TR 143-86L-6	3455	86	143	914	191	812	M16	16	127	7.70
TR 143-86L-7	4030	86	143	1067	191	965	M16	16	127	9.00
TR 188-108L-1	1350	108	188	152	245	76	M16	16	165	2.15
TR 188-108L-2	2710	108	188	305	245	203	M16	16	165	4.45
TR 188-108L-3	4060	108	188	457	245	355	M16	16	165	6.70
TR 188-108L-4	5420	108	188	610	245	508	M16	16	165	9.00
TR 188-108L-5	6770	108	188	762	245	660	M16	16	165	11.20
TR 188-108L-6	8120	108	188	914	245	812	M16	16	165	13.45
TR 188-108L-7	9480	108	188	1067	245	965	M16	16	165	15.75

* Max. Energy capacity per cycle for continuous use. For emergency use only (1 cycle) it is possible to exceed this rating by +40 %.

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