

The **profile dampers TR-HD** from the innovative ACE TUBUS series are maintenance free, ready to install damper elements manufactured from a co-polyester elastomer. The TUBUS profile dampers are loaded radially just like the basic model TR. Compared to the basic model, however, their solid structural design offers a high level of power and energy absorption within a minimum damping distance. The two different material strengths allow different damping characteristics to be targeted. The slightly biconcave structure also ensures softer force run. The TUBUS TR-HD is suitable for all forms of use, which demand a high level of protection against impact or collision. The high level of power and energy absorption offers a wide range of application, amongst other in agricultural technology and for construction machines e. g. shovels or articulated joints of construction site vehicles. The relevant support power also depends on the material strength of the chosen shock absorber. The TR-HD series was specially developed to absorb a **maximum of energy with minimum construction height**. A stroke of 12 mm to 44 mm easily covers energy absorption within a range of between 230 Nm and 5208 Nm. The profile damper is simply and quickly mounted horizontally as well as vertically with the two supplied screws. The drill distance for fastening can be individually adjusted upon request.

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

Calculation and selection to be approved by ACE. For applications with preloading and increased temperatures please consult ACE.

NEW



"The latest high capacity version – for maximum force within a minimum damping distance!"



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

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

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

Mounting: In any position

Static force range:
63 900 N to 639 100 N

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

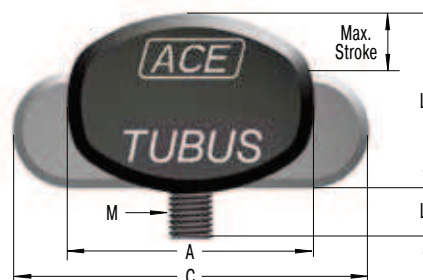
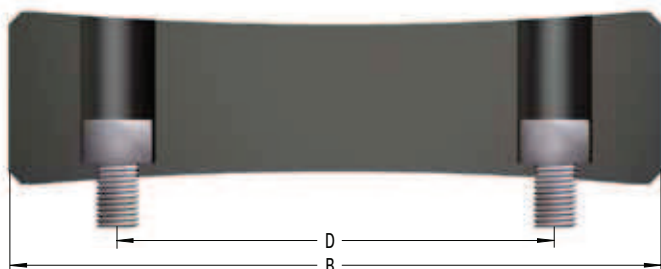
Energy absorption: 24 % to 51 %

Material hardness rating:
Shore 40D, Shore 55D

Max. torque:
M10: 50 Nm
M12: 85 Nm

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





Ordering Example

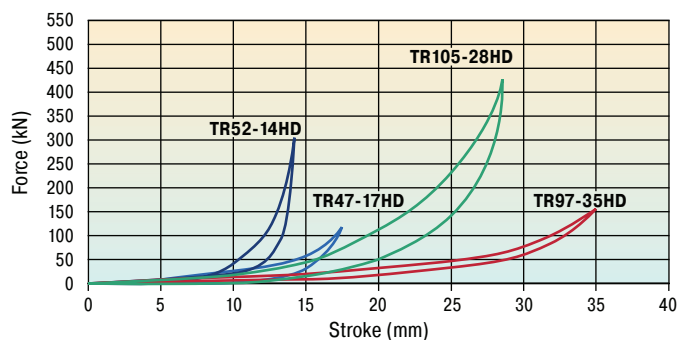
TUBUS Radial _____
 Outer-Ø 63 mm _____
 Stroke 24 mm _____
 Heavy Duty Version _____

TR63-24HD

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

Comparison of Damping Characteristics of Type TR-HD

Force-Stroke Characteristics (static)



Dimensions and Capacity Chart

Type	¹ W ₃ Nm/Cycle	² W ₃ Nm/Cycle	F max. static N	Max. Stroke mm	A	B	C	D	M	L ₁	L ₂	Weight kg
TR42-14HD	230	322	63 900	14	42	148	59	102	M10	20	34	0.17
TR47-12HD	380	532	149 600	12	47	150	58	102	M10	19	31	0.17
TR47-17HD	390	546	122 100	17	47	150	70	102	M10	24	32	0.18
TR52-14HD	720	1 008	304 500	14	52	153	69	102	M10	22	29	0.18
TR57-21HD	530	742	104 800	21	57	149	79	102	M10	18	48	0.34
TR62-15HD	820	1 148	245 000	15	62	153	77	102	M10	16	40	0.33
TR62-19HD	1 180	1 652	389 900	19	62	152	94	102	M10	16	41	0.36
TR63-24HD	850	1 190	194 400	24	63	153	92	102	M10	20	46	0.33
TR72-26HD	830	1 162	124 800	26	72	149	98	102	M12	23	59	0.56
TR79-20HD	1 280	1 792	289 300	20	79	153	98	102	M12	24	54	0.57
TR79-31HD	1 320	1 848	226 600	31	79	155	112	102	M12	23	58	0.56
TR85-33HD	1 150	1 610	146 100	33	85	150	111	102	M12	23	71	0.71
TR89-21HD	2 020	2 828	477 400	21	89	162	112	102	M12	22	48	0.56
TR90-37HD	1 780	2 492	240 700	37	90	155	128	102	M12	23	69	0.75
TR93-24HD	1 640	2 296	302 500	24	93	155	115	102	M12	23	64	0.79
TR97-31HD	3 250	4 550	575 200	31	97	159	129	102	M12	21	63	0.8
TR97-35HD	1 460	2 044	152 800	35	97	151	131	102	M12	20	82	1.06
TR102-44HD	2 230	3 122	254 500	44	102	156	147	102	M12	22	81	1.05
TR105-28HD	2 740	3 836	427 600	28	105	156	126	102	M12	21	72	1
TR117-30HD	3 720	5 208	639 100	30	117	166	143	102	M12	25	66	1.01

¹ Max. energy capacity per cycle for continuous use.

² Energy capacity per cycle for emergency use.