

TUBUS TR

Compact size and soft deceleration

Radial Damping

Energy capacity 1.2 Nm/Cycle to 146 Nm/Cycle

Maximum stroke 17 mm bis 60 mm

For long, soft braking action: The Radial damping forces in this model from the ACE TUBUS-Series provides the TR range. These maintenance-free, ready-to-install elements are made of co-polyester elastomer, which only heats up slightly during operation and therefore provides consistent damping.

The radial loading enables a very long and soft deceleration with progressive energy reduction at the end of the stroke. The TR-Series has been specially designed for maximum stroke with a minimum height, producing an energy absorption per stroke extending from 1.2 Nm to 146 Nm. The dampers are available in compact formats of Ø 29 mm to Ø 100 mm and are supplied with a special screw for simple, quick assembly.

The TUBUS TR products are suitable as end position dampers in linear axes, in toolmaking and tool machines, in hydraulic and pneumatic equipment, handling equipment and other applications.



Technical Data

Energy capacity: 1.2 Nm/Cycle to 146 Nm/Cycle

Energy absorption: 25 % to 45 %

Dynamic force range: 218 N to 7,500 N

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

Construction size: 29 mm to 100 mm

Mounting: In any position

Material hardness rating: Shore 40D

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

M6: 6 Nm

M8: 20 Nm

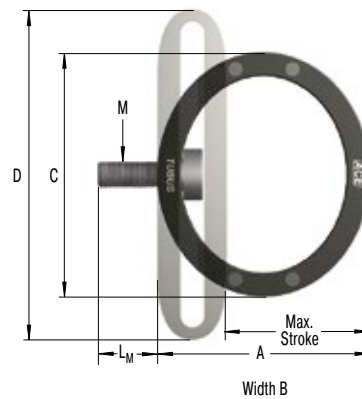
Application field: Furniture industry, Sports equipment, Linear slides, Pneumatic cylinders, Handling modules, Machines and plants, Stacking units, Electro-mechanical drives, Conveyor systems

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.

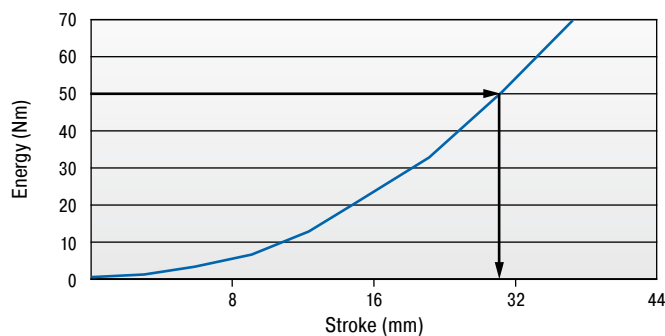
TR



Characteristics

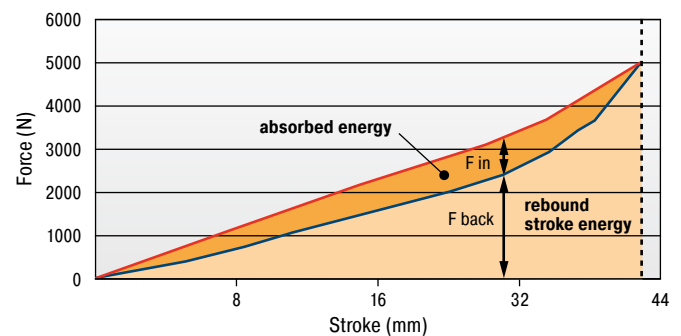
Type TR93-57

Energy-Stroke Characteristic (dynamic)
(with impact velocity over 0.5 m/s)



Type TR93-57

Force-Stroke Characteristic (dynamic)
(with impact velocity over 0.5 m/s)



With the aid of the characteristic curves above you can estimate the proportion of the total energy that will be absorbed.
Example: With impact energy of 50 Nm the Energy-Stroke diagram shows that a stroke of about 31 mm is needed.
On the Force-Stroke diagram you can estimate the proportion of absorbed energy to rebound energy at this stroke length.
Dynamic ($v > 0.5$ m/s) and static ($v \leq 0.5$ m/s) characteristics of all types are available on request.

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

Ordering Example

TUBUS Radial _____
Outer-Ø 93 mm _____
Stroke 57 mm _____

TR93-57

Performance and Dimensions

TYPES	¹ W _s Nm/cycle	Emergency Stop W _s Nm/cycle	Stroke max. mm	A mm	B mm	C mm	D mm	L _M mm	M	Weight kg
TR29-17	1.2	1.8	17	25	13	29	38	5	M5	0.010
TR37-22	2.3	5.4	22	32	19	37	50	5	M5	0.013
TR43-25	3.5	8.1	25	37	20	43	58	5	M5	0.017
TR50-35	5.8	8.3	35	44	34	50	68	5	M5	0.025
TR63-43	12.0	17.0	43	55	43	63	87	5	M5	0.051
TR67-40	23.0	33.0	40	59	46	67	88	5	M5	0.089
TR76-46	34.5	43.0	46	67	46	76	102	6	M6	0.104
TR83-50	45.0	74.0	50	73	51	83	109	6	M6	0.142
TR85-50	68.0	92.0	50	73	68	85	111	8	M8	0.206
TR93-57	92.0	122.0	57	83	83	93	124	8	M8	0.297
TR100-60	115.0	146.0	60	88	82	100	133	8	M8	0.308

¹ Max. energy capacity per cycle for continuous use.