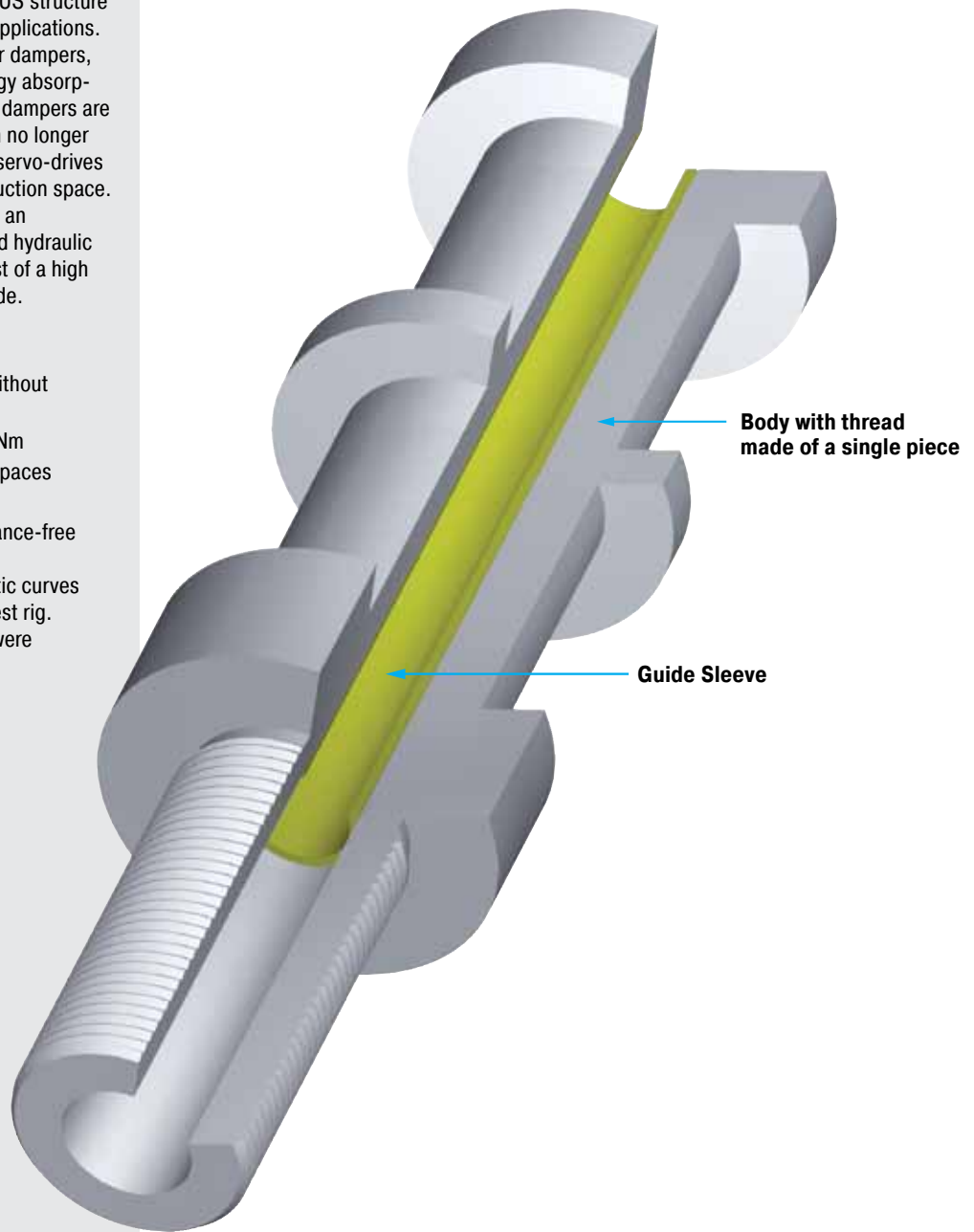


ACE now offers innovative single hit dampers as an alternative to the successful TUBUS structure damper series for emergency stop applications. In comparison to standard elastomer dampers, single hit dampers offer higher energy absorption without the rebound effect. The dampers are deformed during the impact and can no longer be used. They are primarily used in servo-drives with high speeds and limited construction space. The single hit dampers are therefore an affordable alternative to the standard hydraulic safety shock absorbers. They consist of a high quality plastic with a metal core inside.

**The TUBUS series TI offers:**

- Energy absorption up to 96% without rebound effect
- High energy intake up to 4500 Nm
- Use in restricted construction spaces
- Affordable
- Easy to assemble and maintenance-free

The dynamic values see characteristic curves based on a test series with a drop test rig. Different drop heights and weights were considered.



**Environment:** Resistant against lubricants, and chemicals according to the resistance list, without UV protection.

**Mounting:** In any position

**When mounting:** Moisten the intake thread with 2 drops of Loctite 480 and screw in the damper tight by hand.

**Operating temperature range:**

-25°C to +50°C (TI30, TI24)

-40°C to +90°C (TI16)

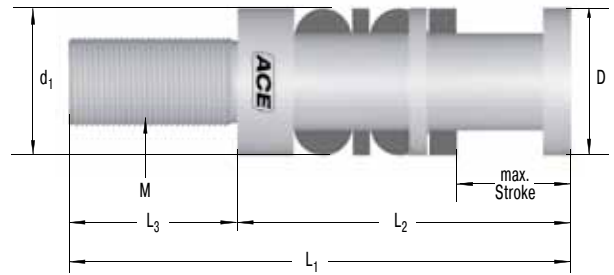
**On request:** Further product sizes on request.



### Ordering Example

TUBUS irreversible \_\_\_\_\_ ↑ ↑ ↑  
 Thread Size M 30 \_\_\_\_\_ ↑ ↑ ↑  
 Stroke 52 mm \_\_\_\_\_ ↑ ↑ ↑  
 Number of bellows \_\_\_\_\_ ↑ ↑ ↑

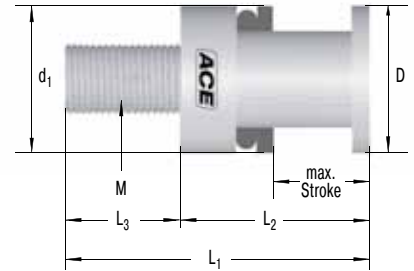
**T130-52-2**



### Ordering Example

TUBUS irreversible \_\_\_\_\_ ↑ ↑ ↑  
 Thread Size M 24 \_\_\_\_\_ ↑ ↑ ↑  
 Stroke 33 mm \_\_\_\_\_ ↑ ↑ ↑  
 Number of bellows \_\_\_\_\_ ↑ ↑ ↑

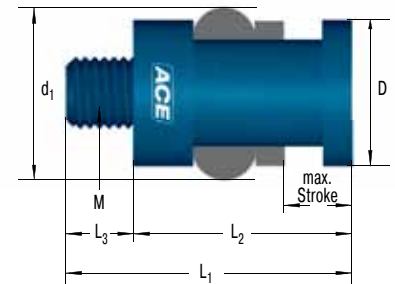
**T124-33-1**



### Ordering Example

TUBUS irreversible \_\_\_\_\_ ↑ ↑ ↑  
 Thread Size M 16 \_\_\_\_\_ ↑ ↑ ↑  
 Stroke 25 mm \_\_\_\_\_ ↑ ↑ ↑  
 Number of bellows \_\_\_\_\_ ↑ ↑ ↑

**T116-25-1**

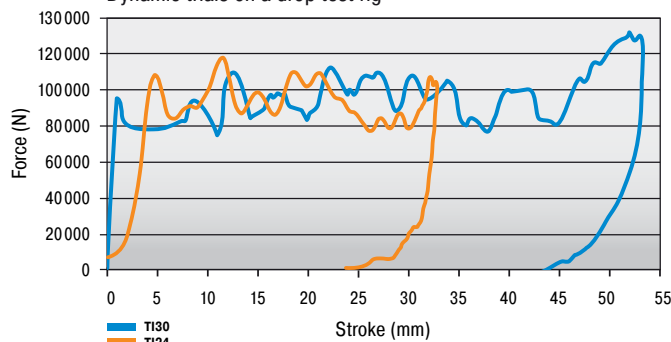


The calculation and selection of the required Single Hit Damper should be carried out or be approved by ACE.

### Characteristics of Type TI30, TI24 and TI16

#### Force-Stroke Characteristic TI30 and TI24

Dynamic trials on a drop test rig

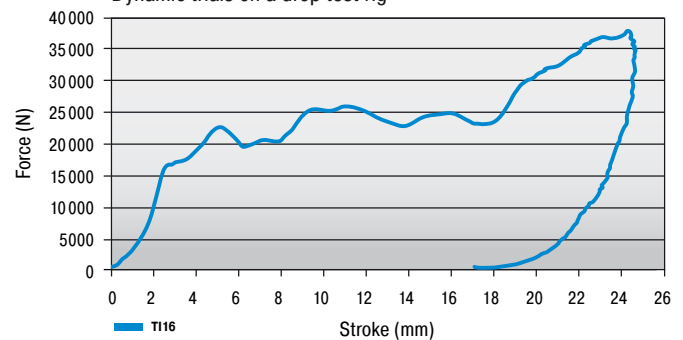


Total energy: 4510 Nm  
 Absorbed energy: 4309 Nm  
 Efficiency: 96 %

Total energy: 2701 Nm  
 Absorbed energy: 2545 Nm  
 Efficiency: 94 %

#### Force-Stroke Characteristic TI16

Dynamic trials on a drop test rig



Total energy: 562 Nm  
 Absorbed energy: 511 Nm  
 Efficiency: 91 %

The characteristic values have been established under dynamic load.

### Dimensions and Capacity Chart

Type	W <sub>3</sub> Nm/Cycle	max. Stroke mm	max. Force N	D	L <sub>1</sub>	M	L <sub>2</sub>	L <sub>3</sub>	max. d <sub>1</sub>	min. depth of thread drill hole mm
T130-52-2	4510	52	121 130	50	170,0	M30x3,5	113	57	50	63
T124-33-1	2701	33	113 590	50	104,5	M24x3	64,5	40	50	40
T116-25-1	562	25	37 138	32	63,0	M16x2	48	15	38	25

The specified W<sub>3</sub> value „max. stroke“ and „max. force“ apply at room temperature. At higher temperatures, the energy absorption reduces accordingly per stroke.