



# TSC

Type Combined Steel Spring and Rubber Spring Unit Isolators

Size T3



#### TSC T3 shown with 4 standard upper fixings and optional soleplate.

A major advance in design has successfully combined the best characteristics of steel springs and rubber springs to produce an efficient, compact and economical range of unit isolators suitable for many types of applications. Many variants of these isolators, designed and manufactured by us have now been in service for more than twenty years.

TSC unit isolators are highly effective in reducing the transmission of vibration, structure-borne noise and shock from a wide range of rotating and reciprocating machinery and in protecting sensitive apparatus from external disturbances. They are particularly suitable for marine and mobile applications as internal snubbers are

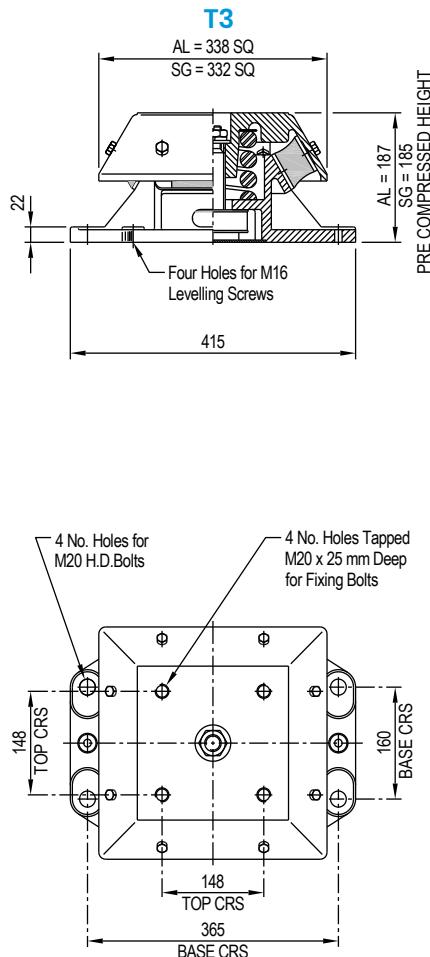


incorporated to control movement of the isolated machine.

Type approval by Det Norske Veritas and American Bureau of Shipping.

#### Design Features

- Helical steel spring to BS1726 Class B.
- Inclined rubber springs are first grade natural rubber to metal bonded elements.
- SG iron castings to BS EN 1563 EN-GJS-400/15. Alternative lightweight aluminium castings to BS EN 1706.
- Steel spring in most variants is isolated from the top casting by resilient seating pad reducing transmission of high frequency vibration and effectively damping spring coil surge resonance.
- Springs are pre-compressed on assembly, resulting in high equivalent static deflection and load capacity with minimum change between loaded and unloaded height.
- Rubber spring elements are effectively protected by the top casting and its extended skirt.
- Rubber spring elements are effectively protected by the top casting and its extended skirt.
- A selection of steel and rubber springs, each having different vertical and lateral stiffness closely controlled in manufacture is available to facilitate the choice of the most appropriate isolator characteristics for a particular application.
- Combined rebound and overload buffer is adjustable to permit optimum setting to be achieved throughout service life.
- Optional soleplate is available to facilitate installation on resin chocks.
- Optional proof plates are available to enable removal of mountings for refurbishment (marine propulsion engines only).
- Available with 4 x M20 upper fixings as standard. Options available for 4 and 2 hole upper fixings in other sizes.



**Please Note!** SG Iron & Aluminium TSC T3 Isolators leave our factory set at different Pre Compressed Heights.

SG Iron Pre Compressed Height = 185mm

Aluminium Pre Compressed Height = 187mm

### Mounting Upper Fixings

4 x M20 upper fixings supplied as standard.

Options available for 4 x 3/4" UNC upper fixings and in the 2 upper fixing hole variant, 2 x M24 or 2 x 1" UNC.

### Application Notes:

- All connections to and from isolated machine must include flexible lengths, not only to prevent transmission of vibration through the connections and allow the system freedom of movement, but also to avoid possible failure of the connections.
- Provision is made for levelling screws in the base of each isolator to facilitate installation and alignment, particularly if, for example, a flexibly mounted prime mover is driving a solidly mounted gearbox.
- Analysis of the isolated system is normally undertaken by Christie & Grey to predict the response to ship motion, machine forces and shocks to enable the correct selection of flexible connections.

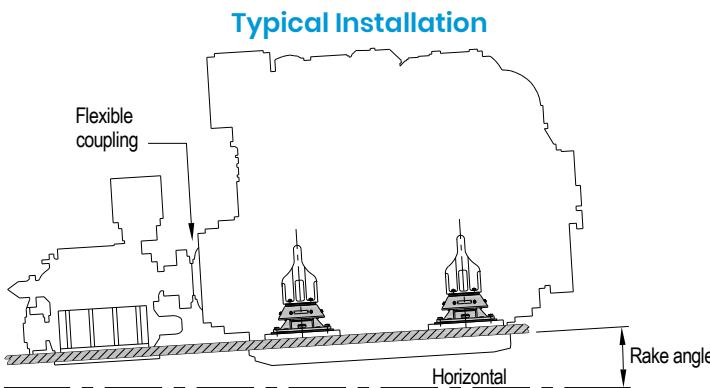
**For full instructions please refer to our data sheets DS013, DS035 and DS040.**

**For more detailed information and technical assistance please contact our Technical Department.**

In the interests of continual development, the Company reserve the right to make modifications to these details without notice.

REFERENCE	VERTICAL LOAD RANGE (kg)	DYNAMIC STIFFNESS (kN/m)		WEIGHT MAX (kg)
		VERTICAL	HORIZONTAL	
T3 35/20	1100 - 1700	1050	1269	
T3 45/20	1300 - 2000	1375	1501	
T3 35/40	1500 - 3000	2163	3016	
T3 55/20	1600 - 2700	2040	2166	
T3 45/40	1700 - 3400	2493	3224	
T3 60/20	1800 - 3200	2665	3148	
T3 55/40	2100 - 3950	3135	3905	52.3
T3 55/30	2150 - 3700	2243	2422	
T3 60/40	2350 - 4600	3772	4879	
T3 70/40	2700 - 5300	5609	7182	
T3 60/50L	3500 - 5600	4037	4463	
T3 60/60L	4200 - 6500	4687	5419	
T3 70/60L	4400 - 7250	6165	7294	

- All values of stiffness are nominal subject to  $\pm 15\%$  variation on final assembly. The isolator rubber elements are pre-loaded 6 mm upon assembly (with aluminium bases by 4 mm).
- Stiffness is linear over working load range.
- Dynamic stiffness may vary with frequency. Values stated are reliable for calculation of low frequency characteristics below 100 Hz.



### Marine diesel propulsion engine on T3 isolators



**Christie & Grey Ltd**

Morley Road,  
Tonbridge, Kent  
TN9 1RA, England

T: +44 (0)1732 371100

E: sales@christiegrey.com

W: www.christiegrey.com