

TT Mountings Installation Instructions



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Installation instructions TT mountings

General

It is advisable to read the instructions completely, before starting to design and / or fit the resiliently mounted system. There are several possible ways to fit the TT mounts to the suspended equipment and / or foundation, the final choice being with the end user.

Preparation

It is critical that the correct vibration isolator is installed in the proper location. Clean the bracket and the TT-mount, especially on the contact surfaces. Clean the upper surface of the ships foundation from dust, rust, oil, dirt and particles at the intended positions of the mountings. Anti corrosion oil should be applied on the steel parts. To prevent the effect of electrolyte corrosion, be aware that there is no direct contact between the basecasting of the TT mount and the steel foundation (plates).

Fitting

1. Check the unloaded height from bottom basecasting to top height re-adjustment nut and dimension H (according to drawing / table).
2. Install the mounts to the engine- and / or gearbox-brackets using the central stud, and slightly tighten the nut at this stage (handtight).
3. If appropriate, remove the transportation bolts and allow the installation to settle on the mounts for at least 48 hours before any attempt is made to align the installation.
4. Check the loaded height at measurement X of the mounts. Align the installation by means of jacking bolts, which can be placed in the four threaded holes of the base casting.

Do not use the adjusting nut for the first alignment, because the adjusting nut is meant to adjust the effect of creep on the alignment after a period of time.

5. We recommend the use of a filler plate directly underneath the mounting over the full length/width of the mounts, certainly when an epoxy resin is applied. Underneath this plate any kind of shim or epoxy resin can be mounted.
6. Individual filler plate thickness can now be measured. Notice that the filling plate must at least have the dimensions of the mounting foot.
7. Care should be taken, during levelling of the installation, to ensure that individual mountings are not overloaded. The variation in laden height should not exceed 1 mm and should ideally be less.
8. After shimming or pouring (•) the mounts, small adjustments of the alignment can still be made to the mountings by means of the height adjustment unit.

After alignment of the installation the nuts on the central stud should be tightened to the recommended tightening torque (see table) which is particularly important for thrust transmitting installations. Also the foundation bolts (min. quality 8.8) have to be tightened in accordance with the required tightening torque (see table). The (compulsory) diameter of the washer underneath the foundation bolts is mentioned in the table. To reach the required preload force at tightening torque the surfaces of the stud and bolts should be slightly oiled.

9. Repeat the adjustment procedure mentioned after a period of time to overcome the effects of creep.

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- Pouring of the foundation plate by means of synthetic cast resin is to be done by the manufacturer or its authorised agency. The type of the cast resin has to be approved by the responsible classification society. The supplier of the cast resin or its authorised personnel has to confirm the mechanical strength of the cast resin considering the tightening torque of the foundation bolts, engine weight and engine torque.

In order to avoid an additional thermal shock of the rubber elements of the TT mounts, an additional heat treatment for speeding up the curing process of the cast resin is not permissible! After curing (curing time is stated by the manufacturer of the synthetic casting resin), the jacking bolts are to be removed.

Maintenance instructions

1. Under normal circumstances the mounts will not require more maintenance than a periodical check on oil and grease contamination of the rubber inserts and clearance check between the wedge and foundation.
2. The design of the base- and top castings protects the rubber inserts from contamination by for instance oil and fuel. We advise to use only natural based soaps for cleaning in the event of any kind of contamination. Due to severe overload, damaging or long-term oil contamination of the rubber inserts, which is recognisable on the breakdown of the rubber to metal bond and / or swollen surface, the TT-mounts can be damaged.
3. Replacement is recommended when the dimension between wedge and foundation is reduced to the value mentioned in the table.
4. In case of mounting failure, we strongly recommend to change all installed TT-mountings of an installation at one time. In this case it is advisable to return the TT mounts completely to Rubber Design.

Mounting type	Description	Dimension	
TT1	Dimension between wedge / foundation	$4,0 \pm 0,5$	[mm]
TT2	Dimension between wedge / foundation	$2,5 \pm 0,5$	[mm]
TT3	Dimension between wedge / foundation	$3,0 \pm 0,5$	[mm]

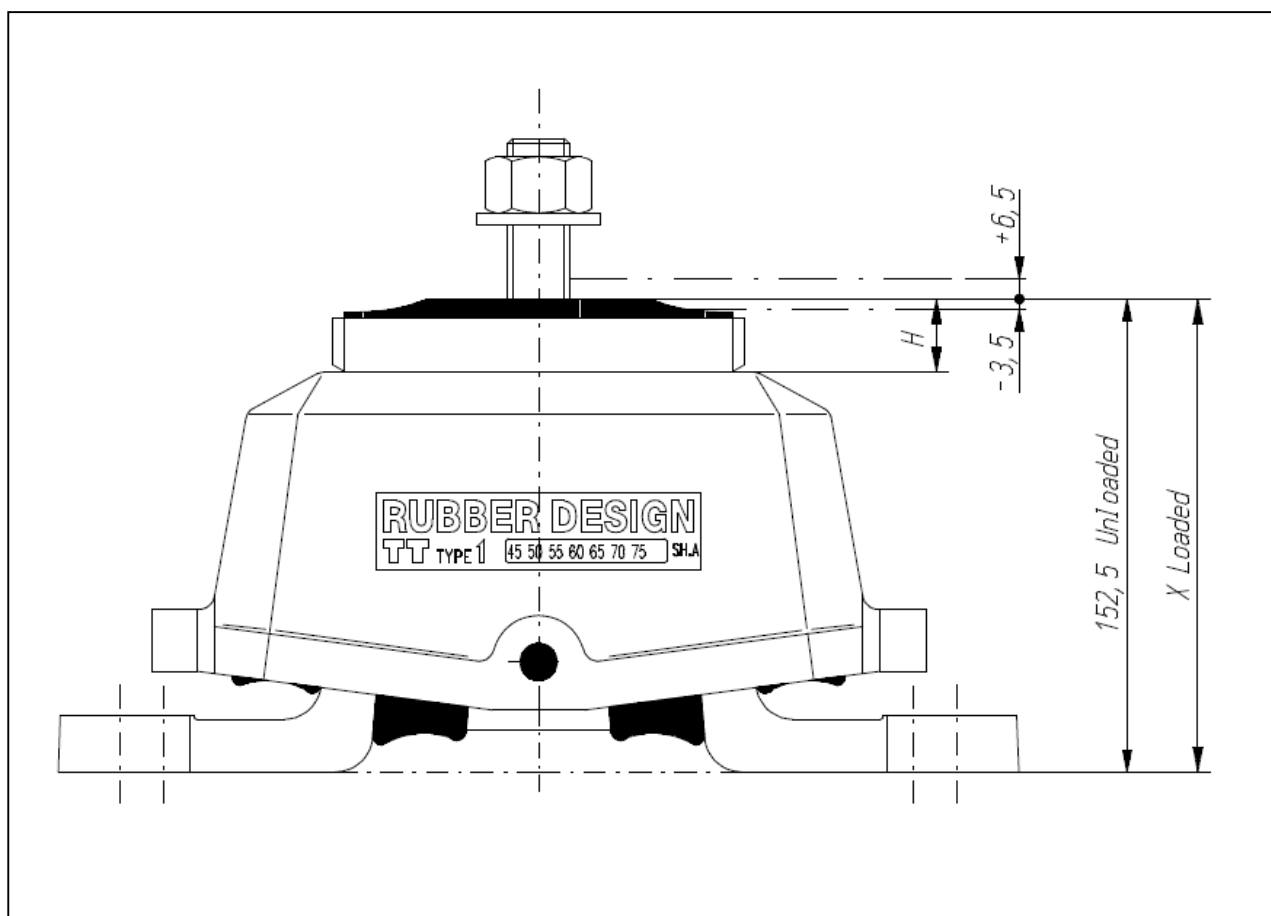


Dimensions, tightening torques, key widths and weights

Mounting type	Description	Size	Tightening torque	Key widths
TT1	Central stud	M 20 x 1,5	380 Nm $\pm$ 5 Nm	30
		M 24 x 2	480 Nm $\pm$ 5 Nm	36
	Foundation bolts	4x M 20	370 Nm $\pm$ 10 Nm	30
	Jacking bolts	4x M 10		17
	Diameter washer [mm]	Ø 37		
	Unloaded height [mm]	152,5		
	Dimension H [mm]	23,5		
	Approx. weight [kg]	12		
TT2	Central stud	M 16	210 Nm $\pm$ 5 Nm	24
		M20	260 Nm $\pm$ 5 Nm	30
	Foundation bolts	2x M 16	120 Nm $\pm$ 5 Nm	24
	Jacking bolts	4x M 8		13
	Diameter washer [mm]	Ø 40	(mudwing repair washer)	
	Unloaded height [mm]	100		
	Dimension H [mm]	22		
	Approx. weight [kg]	3		
TT3	Central stud	M 20	210 Nm $\pm$ 5 Nm	30
	Foundation bolts	2x M 16	200 Nm $\pm$ 5 Nm	24
	Jacking bolts	4x M 8		13
	Diameter washer [mm]	Ø 30		
	Unloaded height [mm]	121,5		
	Dimension H [mm]	21,5		
	Approx. weight [kg]	6		



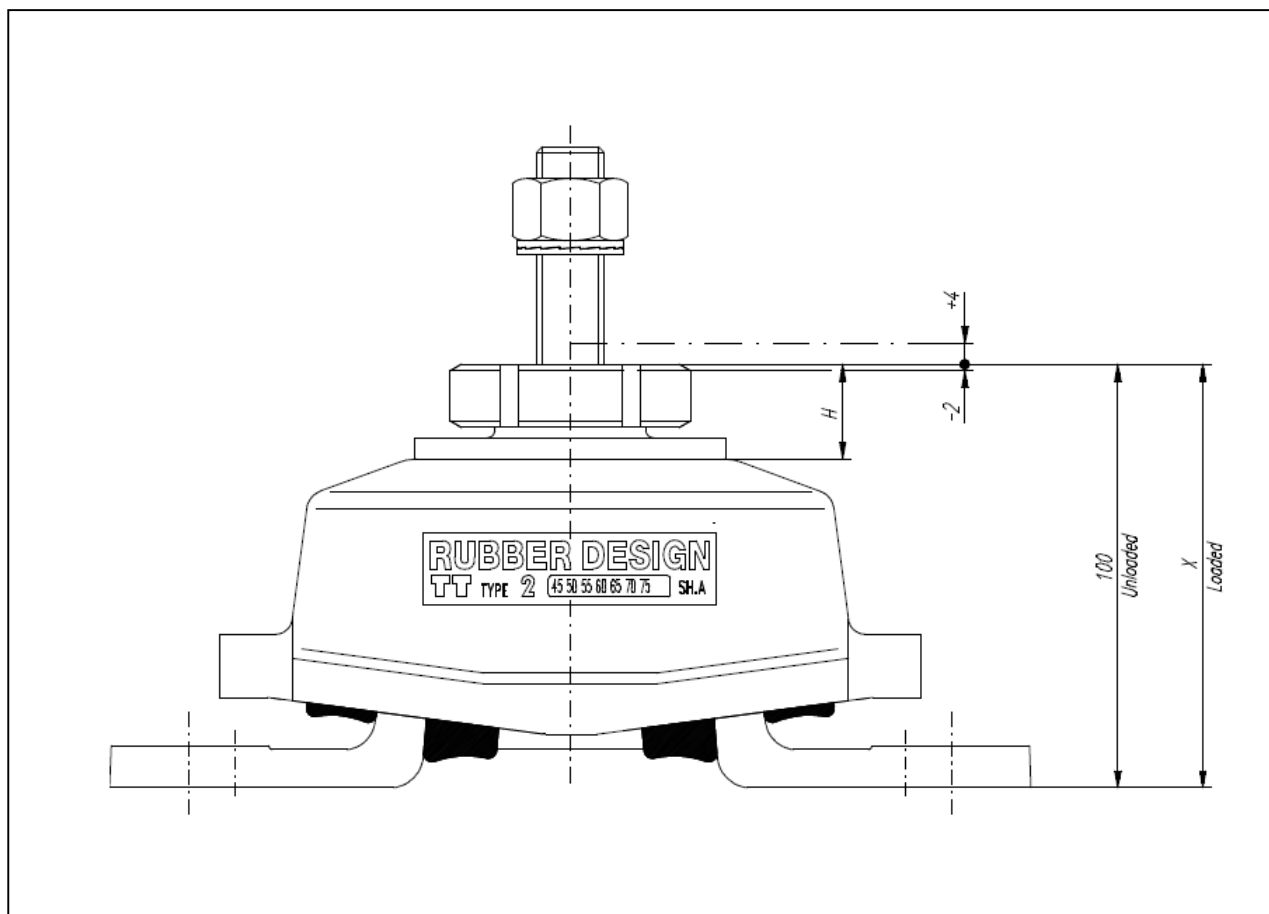
Dimensions TT1 mount





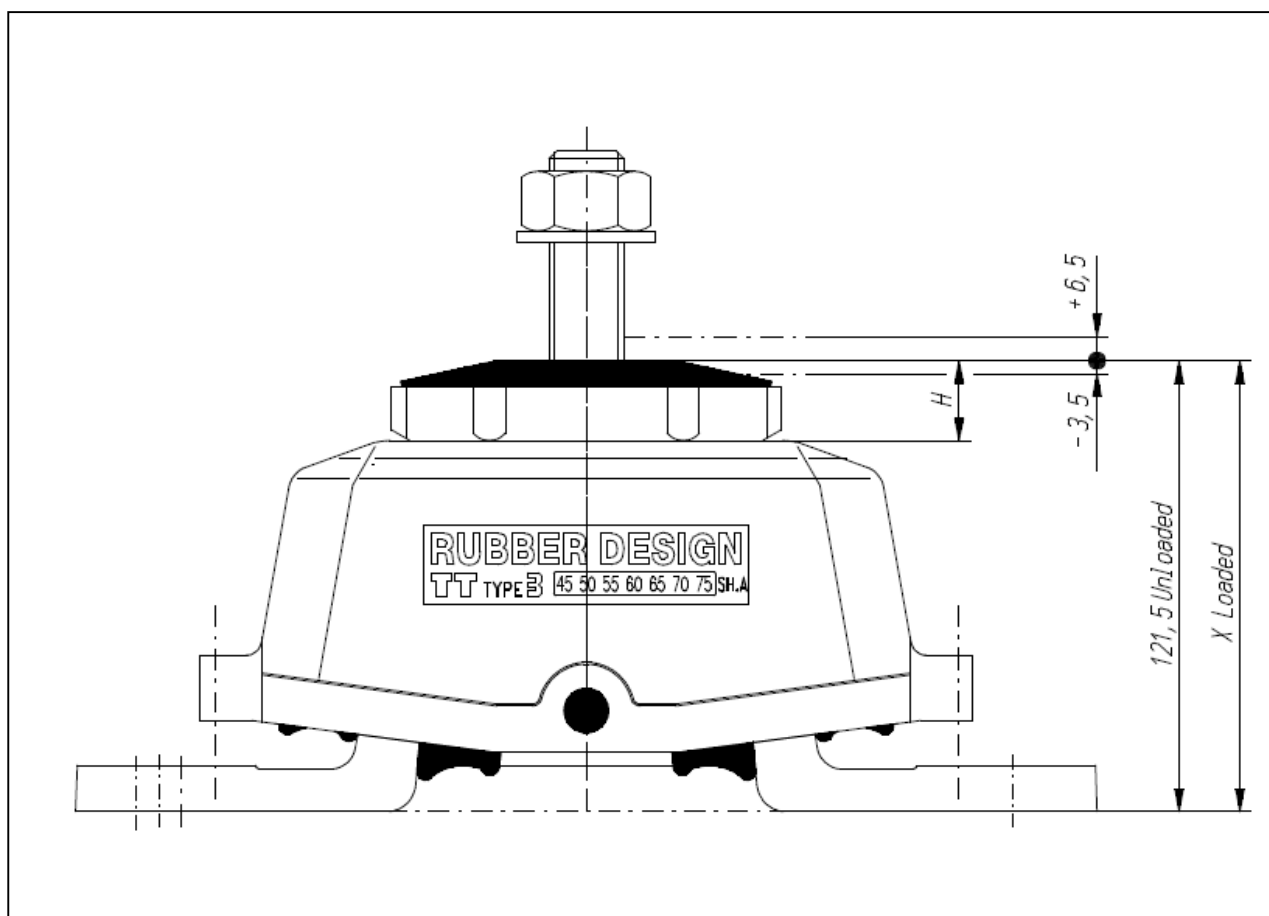
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Dimensions TT2 mount



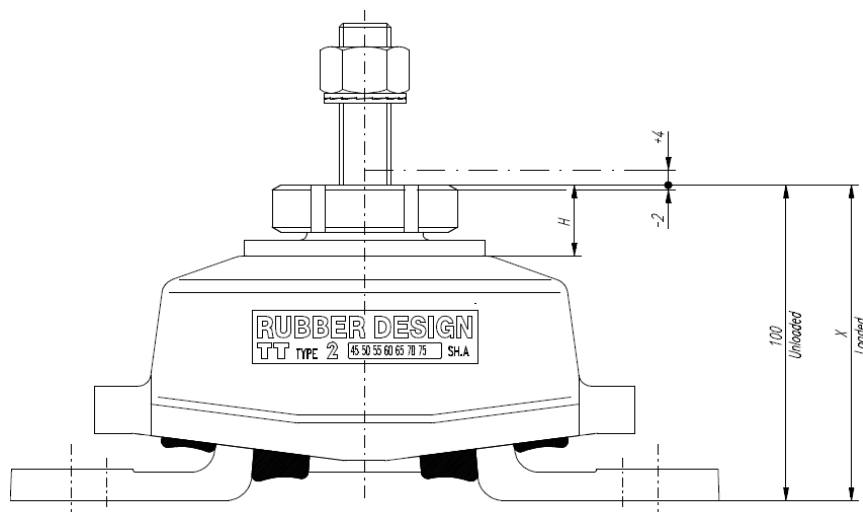


Dimensions TT3 mount





Data sheet for loaded height



Sketch of the locations / positions



Data sheet for loaded height

Remarks

Nr	Position	Total height	Dimension H	Wedge / Foundation
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				



Rubber Design
vibration and noise control



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