

 GOTOH®

# STEALTH

The world's smallest Tuning-key







**Smallest**

**Lightest**

**Layout free**

## The smallest and lightest tuning keys.

Gotoh releases new super mini and featherweight tuning keys. These are the smallest and lightest tuning keys in the world. The housing is almost invisible, that is why they are called "STEALTH"™ keys. They are available to use for guitar, ukulele, or other stringed instruments that have string tension of less than 20kgs. (44 lbs.).

Gotoh is not responsible for any damage when in use by string tension of over 20kgs. (44 lbs.).



### *The smallest size and lightest weight.*

- The smallest housing 8.5mm (.340") x 21mm (.830") x 4.5mm (.18").
- It is 1/2 to 1/3 of the weight of ordinary guitar machine heads. The original buttons are available in aluminum or resin. Weight is 11 grams (.026 lb.) each with aluminum buttons and post.

### *Function*

- Available for use on electric guitars, acoustic guitars, ukuleles, etc. by changing the shaft and button. (String tension must be less than 20kgs. (44 lbs.).)
- Another option is to have the string post come out the side on which the GOTOH logo is stamped, for mounting on the face of the headstock. A shorter post is available for this use. When using the key in this style, string tension must be less than 10kgs (22 lbs).
- There is a wide variety of new possibilities on instruments because of the previous limitations imposed by ordinary keys. For example: by recessing in the headstock; mounting on the face or side of the headstock.
- It will be easier to adjust the balance of the instrument with the lighter tuning keys. Also, the lower weight is easier on the musician.
- The housing is in dignified satin black and all other parts are finished in chrome, gold or black.
- Using a sure-lock mechanism for the torque adjusting screw that is made to last.
- The materials of the working components are – stainless steel, aluminum and brass, which are very durable and resistant to rust.

### *High precision*

- The gear ratio is 18:1 with micro worm gear inside for smooth tuning.
- Super mini scale and stability is possible because of high precision and micron machining process.
- Equipped with metal bearing and washer in the operational parts results in very smooth action in spite of the small size.





# Contributes to the possibility of musical instrument design.

- ① Size comparison of ST31 and SD90.
  - ② ST31 - Only 11.9 grams. ( In case of SB5 and standard post )
- ※Weight was measured except for the bush and screw.



## Ecology

- **Reduce** : It is important to reduce the use of raw materials for the global environment. The STEALTH keys have reduced the material to 1/2 ~ 1/3 from ordinary keys.
- **Recycle** : We feel it is necessary to recycle resources for the protection of the environment. All the main parts used for the STEALTH keys are composed of recyclable resources.

## STEALTH-Key Example of layout

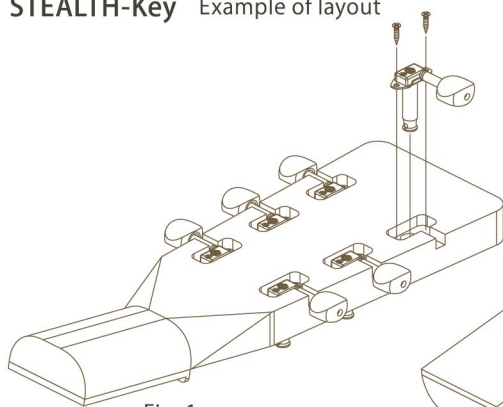


Fig. 1  
Installation to the head side.

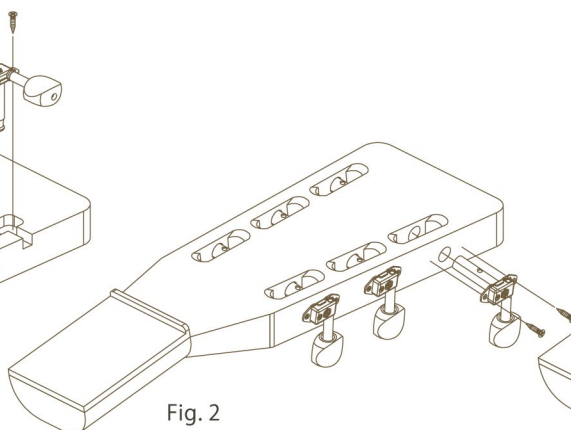


Fig. 2  
Embedding is possible on a head.

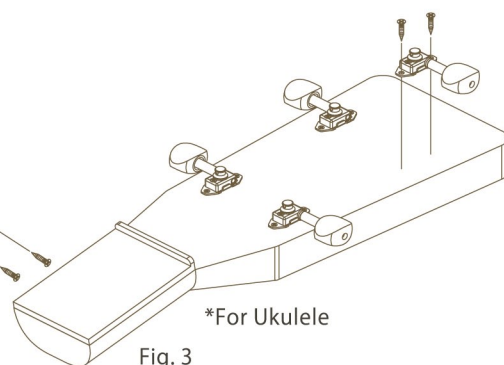






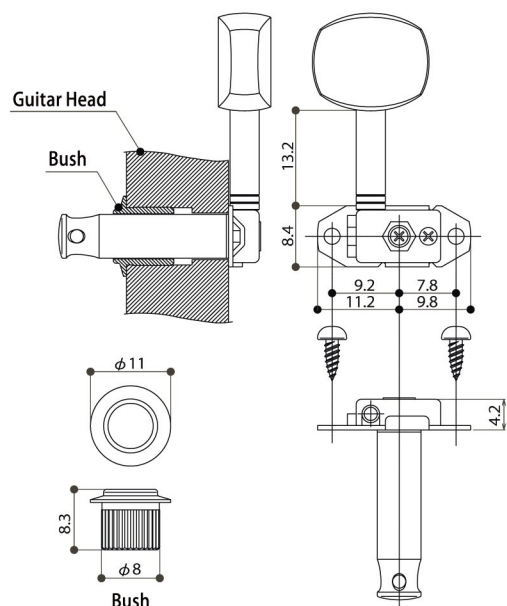
Fig. 3  
Installation to the front of a head.

# STEALTH-KEY SERIES

For Electric and Acoustic Guitar  
For Ukulele

## ST31 ST31 STM31 STP31 STS31 STV31

Head Type	GUITAR    UKULELE 
Finishes	C. GG. CK
Gear ratio	1 : 18 Micro worm gear
e.g.	ST31-SB2 STP31-SB3 STM31-SB5L



ST31-SB3 C



ST31-SB4 GG

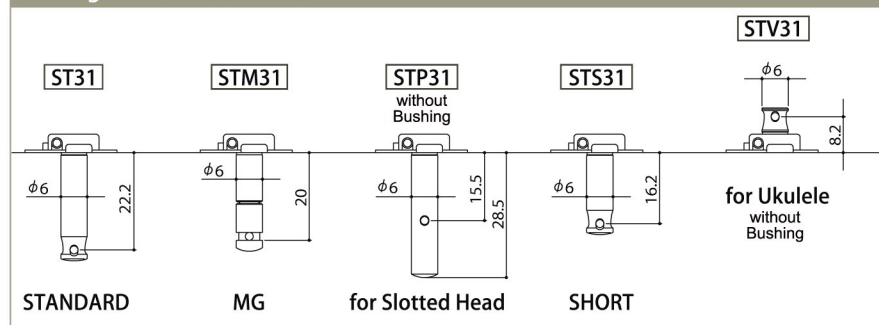


ST31-SB2 CK



ST31-SB5 C

## String Post Dimensions



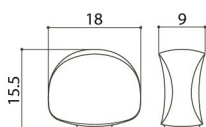
STEALTH Key BUTTON OPTION Choose the button from listed below when order for machine head is placed. (actual size ratio : about 50%)

Extension Shaft-less type

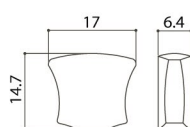
Material : aluminum



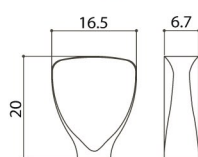
SB2



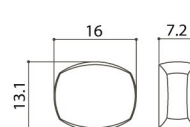
SB3



SB4



SB5



SB6

