

Prevention of Settling and Combined Use

1 Prevention of Settling

When wave washers, bending washers, and Dish Springs are used under the conditions shown in (1)-(3), the height becomes lower than the initial free height due to the effect of settling, and the load changes (See Fig. 1). Compressing before using wave washers or disc springs can remove this sagging (See Fig. 2).

- (1) When a repetitive load is applied
- (2) When using in a creep condition
- (3) When the wave washer gets compressed during installation

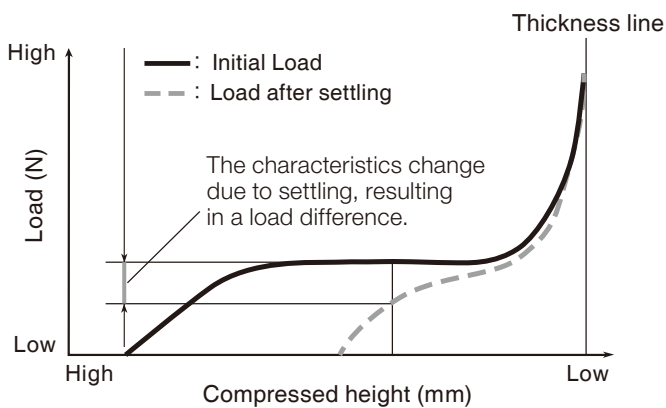


Fig. 1

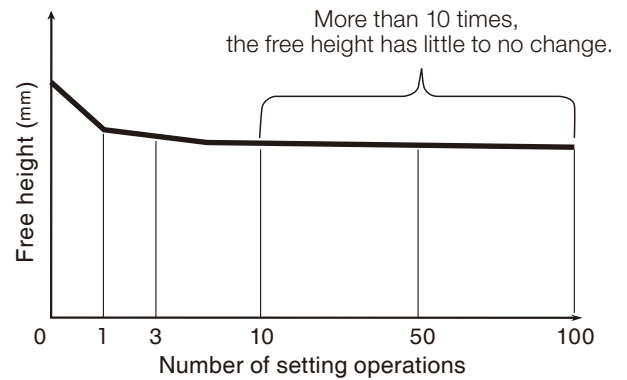


Fig. 2

2 Combined Use

For the Wave and Dish Springs, the load and the deflection can be changed according to the combination (stacking) methods as shown below (see Fig. 3). However, the Wave Washer needs to be combined with flat washers.

- To make the load larger with a certain deflection, combine the washers in the same direction.
- To make the deflection larger at a certain load, combine them in the face-to-face directions.
- To make both the deflection and load larger, combine them using both the methods.

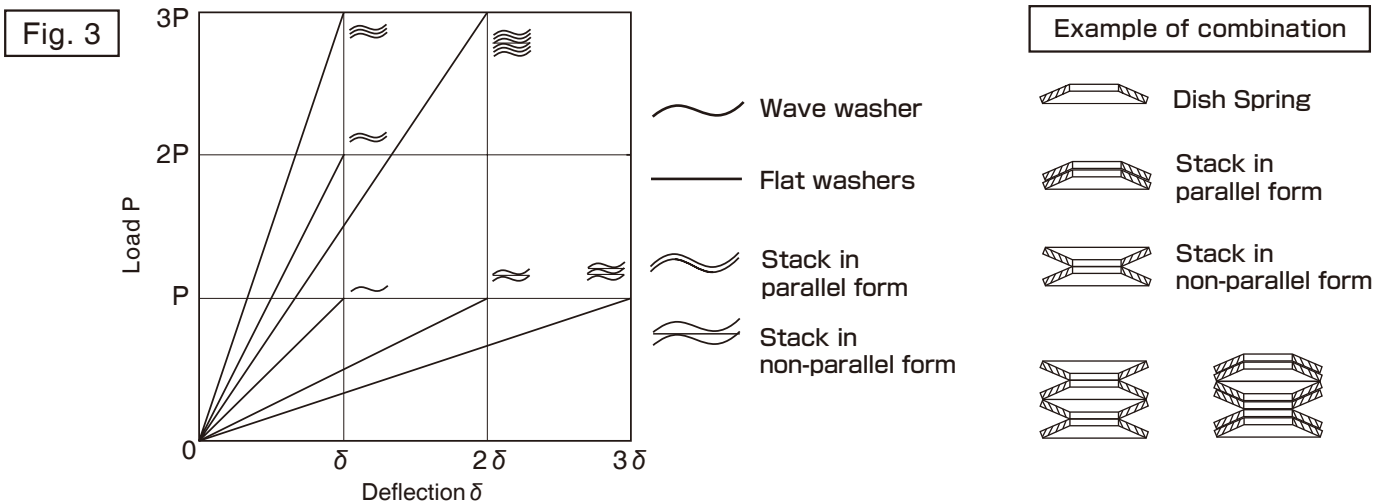


Fig. 3