

Introduction of Flange Gap Gauge



Figure1 Photo of product appearance



Figure2 Photo of product storage

1. Introduction

For the safe operation of various plants, periodic inspections, reliable repair work, and record management are essential. However, in recent years, the problem of technology inheritance due to the retirement of veteran workers and the decrease in practical opportunities due to the extension of regular repair intervals have occurred. Under such circumstances, there is a growing trend to use digital technology to maintain and manage plants facing ageing. This paper introduces the "Flange Gap Gauge," a digital caliper with a measurement data transfer function useful for dimensional measurement.

2. Production dimensions and main specifications

2-1) Production dimensions

Figure3 shows the production dimensions.

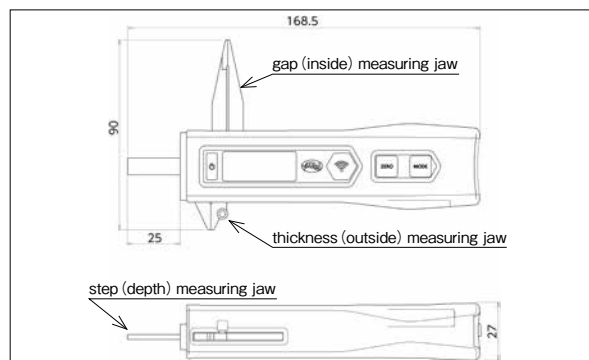


Figure3 Product dimensions (unit: mm)

2-2) Main specifications

Table1 shows the main specifications.

Table1 Main specifications

product name	Flange Gap Gauge
part number	No. FGG-01
size	168.5mm×90mm×27mm
weight	200g
range	0~25mm [Minimum gap (inside) is about 2mm]
accuracy	±0.1mm
Minimum display unit	0.1mm
Operating environment temperature	0~40°C
Battery	Continuous use time about 10 hours
charging time	about 70 minutes

3. Main functions and features of the product

3-1) Easy measurement and digital recording

Using the same measurement methods as ordinary calipers, data can be sent to a device by pressing the data transmission button.

A large display and backlight are used to make it easier to read measured values and a fixed value mode is equipped, which records values held for 0.5 seconds or longer during measurement. (Figure4)



Figure4 Display and data transmission button

3-2) Data display and output

Measurement data can be displayed on a smartphone, tablet, or other device installed with the free dedicated application*, using the Bluetooth® function to show the results of measurement values or output as a CSV file. The file can then be transferred to a PC to support the creation of reports (Figures5, 6 and Table2).

* The dedicated free application is "TRASAS Admin," provided by KYOTO TOOL CO., LTD.

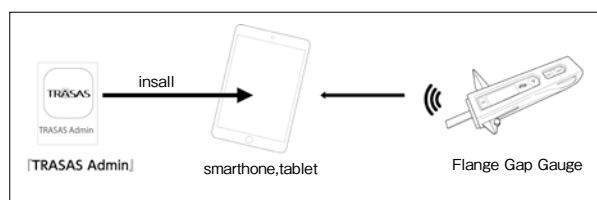


Figure5 Linkage with terminal

+11.3 mm	
ラップ 8	+11.3 mm
ラップ 7	+15.2 mm
ラップ 6	+16.3 mm
ラップ 5	+19.4 mm
ラップ 4	+21.0 mm
ラップ 3	+11.6 mm
ラップ 2	+13.9 mm
ラップ 1	+13.7 mm

Figure6 Example of result display of measurement data

Table2 Example of data output of measured values

タイムスタンプ	計測値	単位
2020/10/06 14:17:28	+13.7	mm
2020/10/06 14:18:11	+13.9	mm
2020/10/06 14:18:26	+11.6	mm
2020/10/06 14:18:38	+21.0	mm
2020/10/06 14:19:19	+19.4	mm
2020/10/06 14:19:44	+16.3	mm
2020/10/06 14:20:04	+15.2	mm
2020/10/06 14:20:13	+11.3	mm

3-3) Three measuring points

There are three measuring points, flange gap (inside) measuring jaw, thickness (outside) measuring jaw and step (depth) measuring bar, that enable measurement according to the application (Figure3).

3-4) Portability

The product is equipped with a strap that prevents falling during measurements and a rubber jacket to improve the grip for stable measurements.

Please refer to the instruction manual for other details and measurement methods. It can be viewed and downloaded from the catalog download page on our website.

4. Usage opportunities

4-1) Flange fastening management

Gap measurement between flanges may be performed as a completion inspection of flange fastening work. As awareness of safe plant operation has increased in recent years, plant owners have been requesting contractors to perform gap measurements, and contractors have been adopting this method to differentiate themselves from their competitors.

However, the current measurement methods often use ordinary calipers and taper gauges, and there are problems such as reading error of measured value, erroneous recording, and troublesome report preparation.

The digital caliper "Flange Gap Gauge" is a measurement

tool that can solve these problems.

4-2) Various product inspections

It can also be used to manage data on the measurement results of gaps (inside), thicknesses (outside), and steps (depth) in various other measuring opportunities.

5. Effects

The following effects can be expected from the use of a Flange Gap Gauge.

5-1) Prevention of human error

- ① Elimination of value reading errors and recording errors during measurements
- ② Elimination of mistakes when entering records into a PC

5-2) Shortening the work time from measurement to report creation

- ① Simplification of recording and inputting measurement results leads to shorter work time

6. Conclusions

We believe that the Flange Gap Gauge introduced in this article is a helpful measurement tool for managing flange fastening that leads to safe and secure plant operation. We will continue our efforts to provide products that can contribute even more.

7. References

- 1) KYOTO TOOL CO., LTD.: TRASAS Admin User's Manual

※ Bluetooth® is a registered trademark of Bluetooth SIG, Inc. (USA) .



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