

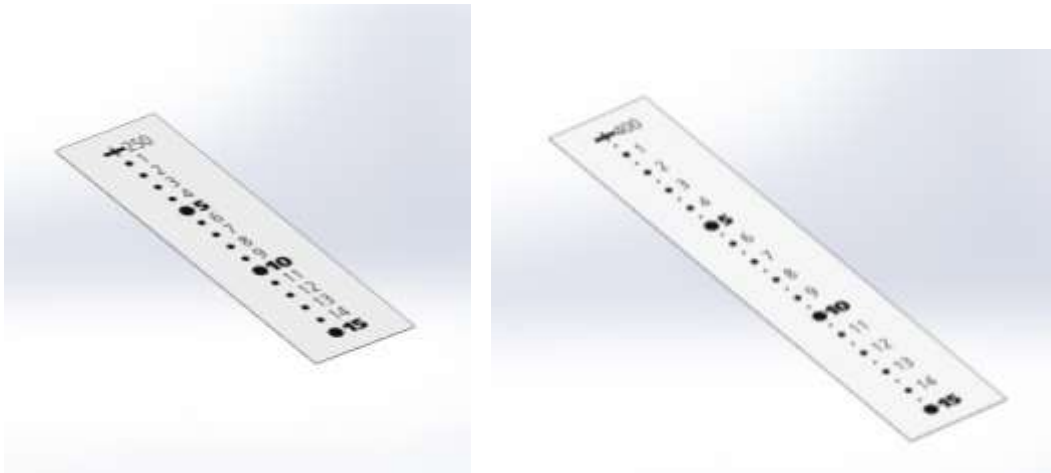
# Universal Deck Gauge

For close-hauled boom angles – IOM to A Class

## Introduction

The gauges are printed on waterproof Brother TZ thermal 24 mm wide laminated tape, intended to be attached to the deck.

**There is a choice of colour – black or white** numbers and marks - both on a clear tape so the background of whatever the tape is attached to shows through.



*Figure 1. Universal gauge general layout*

The gauges are specifically designed for right-handed or left-handed use; that is, they may be applied on the port side or on the starboard side (and two can of course be applied, one on each side).

They are designed to read the close-hauled sheeting angle of the main or jib boom, and come in two ranges - from **zero up to 10°** or from **zero up to 15°** respectively.

The 10° gauges are intended for main booms, while the 15° gauges are intended for headsail booms.

The gauges currently come in two sizes

**250 mm size** - indicates the boom angle in steps of one degree when placed 250 mm from the rotational axis of the boom and with the zero point on the hull centreplane – the 10 degree version suiting the main boom, and the 15 degree suiting the headsail boom, of IOM and M class boats.

**400 mm size** - indicates the boom angle in steps of 0.5 degree when placed 400 mm from the rotational axis of the boom and with the zero point on the hull centreplane – the 10 degree

version suiting the main boom, and the 15 degree suiting the headsail boom, of 10R and 6M and A Class boats.

The gauges can of course be positioned at any distance from the boom pivot, and at any angle to the longitudinal axis, in which case their readings are arbitrary units and not degrees of sheeting angle.

## Angled foredeck

On an angled deck, typically the foredeck, the gauge over-reads due to the attitude of the deck. This may not be a matter for concern, certainly for deck slopes of 10° or less. If the gauge reading needs to be corrected so that the numbers more accurately read in degrees, this is done by moving the gauge towards the rotational axis, according to the following table. For example, a 400 mm nominal radius gauge on a foredeck which slopes 30° should be positioned 346 mm from the pivot point.

*Table 1. Pivot radius corrected for deck slope*

Deck slope to horizontal	Nominal pivot radius	
	250 mm	400 mm
15°	241	386
20°	235	376
25°	227	363
30°	217	346
35°	205	328
40°	192	306

*Note: The corrected pivot radius is the nominal radius multiplied by the cosine of the deck slope.*

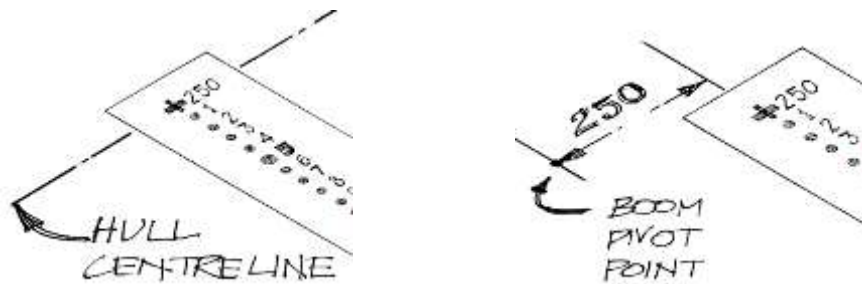
## Application

The gauges have a sticky backing, and adhere exceptionally well to any smooth, relatively flat, surface, such as a deck which is laminated in glass or carbon fibre or comprises varnished wood. Note that while the gauges do stick, they do not adhere strongly to woven deck patch material, such as Dacron. Some part of the gauge should be attached to a clean, fixed, smooth surface to prevent loss of the gauge while sailing<sup>1</sup>. Also note that the gauges are a relatively stiff plastic and are not suited for wrapping around tumblehome, other curved deck areas, or curved fittings<sup>2</sup>.

Where the tape attaches to a problematic material or surface, it may help to trim the corners to a 5 mm 45° chamfer.

To affix the gauge, peel off the tape backing. Place the gauge at right angles to the longitudinal axis and position the 250 or 400 index mark on the boat centreline at the relevant distance from the pivot point. Ensure the surface is entirely free of grease and dust. The bond is immediate. Note that removal after application is likely to result in damage to the gauge

because of the strength of the bond, so the gauge should be positioned with care; it is not repositionable.



*Figure 2. Gauge positioning, example using 250 mm gauge for boom sheeting angle*

Fittings or track may lie on the centreline in a region where the gauge is to be applied. The gauge can be trimmed with scissors or scalpel to clear the obstruction.

Different rigs will typically have different jib boom pivot points. Additional gauges can be placed on the foredeck to suit each rig as desired.

## Notes

1, 2. Tape is available with extra strength adhesive, ref. TM-20, which will adhere reasonably well to Dacron. It is a flexible tape which will wrap well around a radius not less than 5 mm. Contact SAILSetc.

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