

SILVA

FULL VERSION MANUAL

103RE

Art.no 37189-0101 (MN), 37189-0103 (ME), 37189-0105 (MS)



SILVA MARINE RACING COMPASS 103RE (RACING ELITE)

Thank you for choosing a 103RE, Racing Elite compass. 103RE is a high quality compass for sail racing, including the unique offset racing scale. Also cruisers who want to read the course from the rail will enjoy this compass featuring a very clear scale, stable card and simplicity of use.

PRODUCT OVERVIEW

THE COMPASS CARD HAS 3 SCALES WITH 3 LUBBERLINES

1. Top scale 360°, read against the back central lubber line on downwind.
2. Starboard green 360° edge scale, offset 40° anti clockwise from top scale, read against starboard lubber line on starboard tack.
3. Port red 360° edge scale, which is offset 40° clockwise from top scale, read against port lubber line or port tack.

The two front lubber lines are also offset 40°, from the central lubber line.

The offset edge scales and front lubber lines, allows the helmsman to read the course from the normal position in the boat, on the rail usually slightly aft and to the windward side of the compass. This makes it possible to read the course from 3 positions in the boat!

MEMORY ARROWS

The green starboard arrow and red port arrow on the compass housing, are to remind you to tack from starboard bow if the course decreases, and tack from port bow if the course increases.

THE PACKAGING INCLUDES

- Compass unit
- Mounting kit

OPTIONAL ACCESSORIES

- 12V "stick on" illumination (Art no. 34479)
- Compensator (Art no. 34472)

MOUNTING

103RE is designed for horizontal mounting on dinghies like the Laser below the mast, and therefore has a hole for the cunningham or downhauls.

The mounting kit includes screws, mounting moulding and template for mounting where needed.

COMPENSATION

If the deviation is more than 5°, compensation is recommended. For the compensation procedure, see the instructions supplied with the optional compensator.

Since magnetic conditions in a boat are liable to change, we recommend checking the compass once a year, and always after installation of equipment which might affect the compass.

MAINTENANCE

To clean the compass use mild soap solution only and a soft cloth. Do not use strong solvents, which may damage the plastic. When not in use we recommend that you demount the compass and store it in room temperature.

TECHNICAL SPECIFICATIONS

Type of compass: Dinghy racing compass

Illumination: Optional (Art no. 34479)

Lubber lines: Yes, centre (back) and side view at 40°

Centre sighting peg: No

Gimballed cradle: No

Accuracy: ±0.5°

Apparent card diameter: 100 mm (4")

Compensator: Optional (Art no. 34472)

Card type: Cone

Card graduation: Edge: Elite. Top: every 5°

Heeling angle: Roll: 30° Pitch: 30°

Heeling angle scale: No

Mounting: Dash

Mounting angle: -10° to +110°

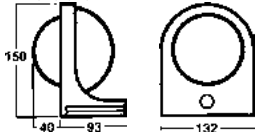
Temp operating range: -10°C to +70°C (14°F to 158°F)

Storage temperature: -30°C to +70°C (-22°F to 176°F)

Material: Acrylic/ABS

Weight: 909 g

Dimensions:



PROTECT THE ENVIRONMENT.

The Compasses should be recycled and must not be thrown in the regular trash. Dispose these items in accordance with applicable local regulations.

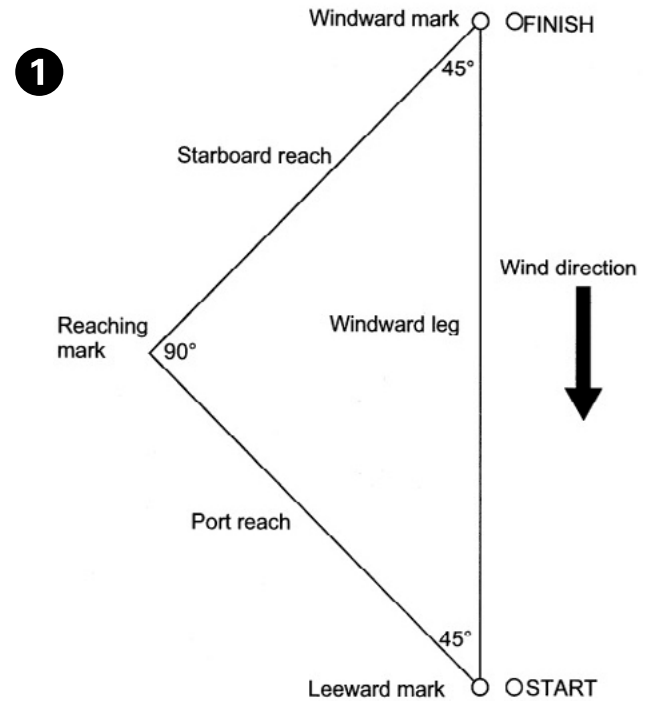
For more information please visit www.silva.se



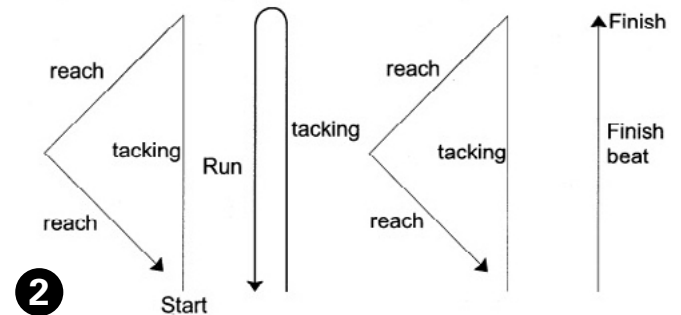
HOW TO SAIL IN WIND SHIFTS WITH RACING ELITE

The most important use of the racing compass is for finding the right times to tack in the wind shifts on the windward legs of the race. The typical wind shift situations are described here. To become a successful racing sailor, you should be thoroughly acquainted with these principles.

THE OLYMPIC RACE COURSE:



This is how the Olympic course is usually sailed:



Racing Elite gives you that winning advantage to use the wind shifts to your best advantage!



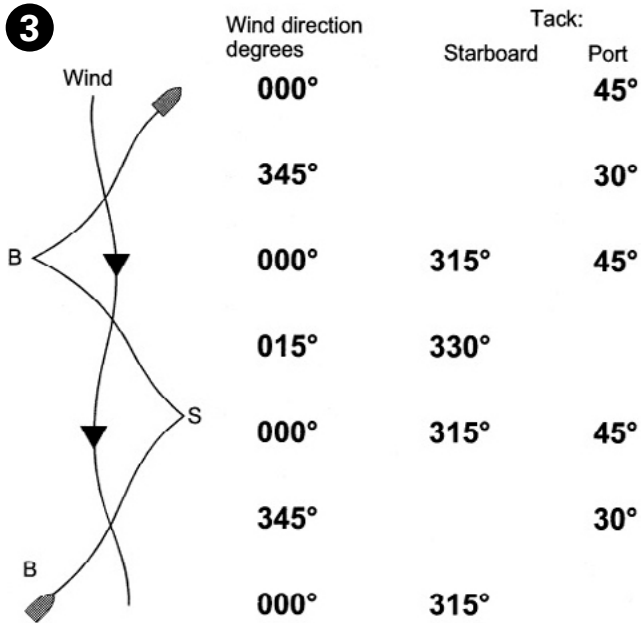
Visit: www.silva.se
for more information about the
Waste Electrical and Electronic
Equipment (WEEE) Directive.



OSCILLATING SHIFTS

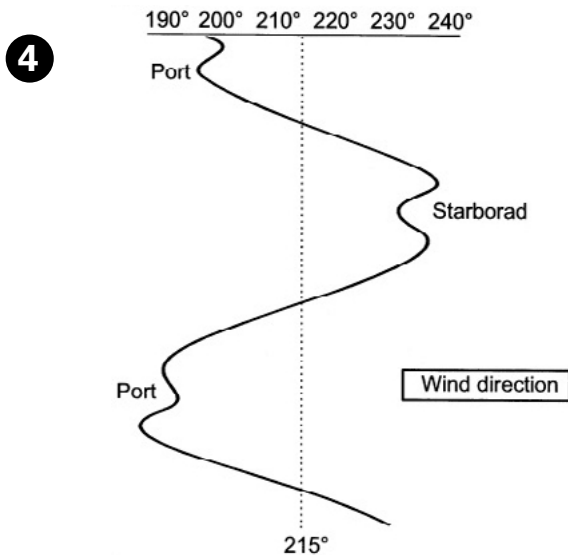
The wind direction sometimes oscillates about an approximate mean value. While sailing up-wind, these shifts seem to occur more frequently to a fast boat. When sailing in such oscillating shifts, you should always tack in order to be on the lifting tack. This will give you the straightest possible course towards the windward mark.

If the wind veers, tack to starboard to let the wind come in from that side. If the wind backs (swings to the left), you should let it come in from the left by tacking to port.



In figure 3, the boat in the example has a tacking angle of 90° and the average wind direction is supposed to be 000°. The boat starts by beating on port tack and is gradually lifted by the backing wind. But then the wind starts to veer and eventually passes the average wind direction. Believing that the wind will continue to veer, the helmsman tacks to starboard as the average wind direction is passed. He then is lifted up to 15° by the veering wind. Here the wind starts to back again. When passing the average wind direction, the helmsman tacks to port. He is then lifted on port tack until he reads 30°, he is then lifted 15°. Then the wind starts to veer again.

If the wind oscillates between 200 and 230 degrees, tack as the wind goes past 215 degrees. The corresponding reading on the scale is 180° on starboard and 230° on port tack. If you tack as soon as the wind starts to swing back from the extremes, you will find yourself headed on the first part of the new tack. So small shifts that do not pass the mean value shouldn't be tacked on. It is the average wind direction for the whole leg that counts.

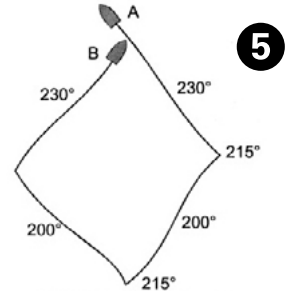


Rule of thumb: As reading goes above mean: Tack to port.
As it goes below mean: Tack to starboard.



However, small shifts that do pass the mean wind direction shouldn't be neglected although they might be difficult to see. The difference between being headed or lifted while beating is almost one metre per degree wind shift, per knot and minute sailed. This means that going the wrong way in a five degree shift while sailing at 5 knots for one minute would bring you almost 20 metres behind a boat that went the right way. It isn't easy to make up for such losses by trying to sail faster.

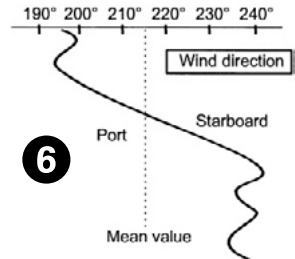
Boat A tacks right, boat B tacks wrong!



PERMANENT SHIFTS

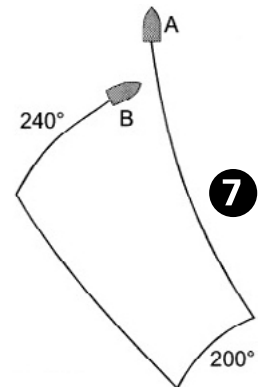
The wind sometimes shifts without returning to its original direction, at least not for the remainder of the windward leg.

In this example 6, the wind is first oscillating at about 200 degrees. A permanent shift makes it veer to 240 degrees and here the oscillations continue. Tactically, the oscillations could be neglected in a case like this. Changing tacks should only be considered when the wind direction goes past its mean value for the whole windward leg.

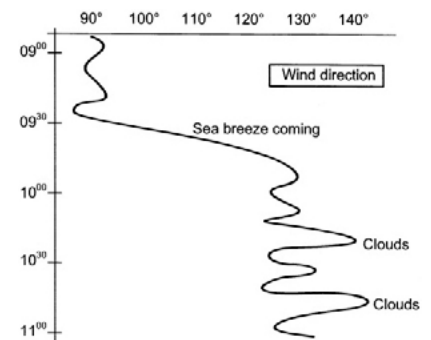


It is often difficult to predict permanent shifts. Sometimes they are caused by "wind bends" over the coast line or by channelling between islands. They could also be caused by clouds, the sea breeze coming in or appear for other, totally unpredictable reasons. Shifts caused by topography should be sorted out from those within the wind so that you can anticipate what will happen on the next windward leg.

Sail into the new wind when there is a permanent shift. If the wind veers, tack to port. You will be more and more headed. Then tack slightly before arriving at the lay line. Now the veering wind will lift you up to the mark (Boat A). Tacking the opposite way does not pay off since you would lose more while being headed on the second tack than you could win by being lifted on the first (Boat B).



Charts of wind shifts made by sailing meteorologists during races show that the wind directions often change in very complex patterns. Oscillations are added to shifts caused by the coast line, clouds or the tendency of the sea breeze to veer with the sun during the day.



Other racing compasses have to be adjusted before the start to set the estimated mean wind direction. This can be difficult and as soon as this direction changes any substantial amount the compass needs readjustment. It is an advantage if the variations of the wind direction can be followed directly and conveniently while sailing. This gives a better idea of how the wind is shifting and permits continuous reappraisal of the mean wind direction.