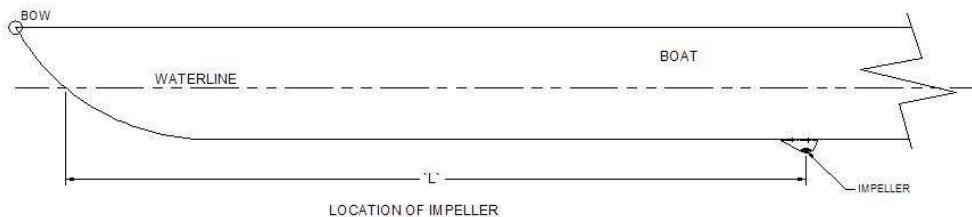




Coxmate SC-XP Speed Sensor

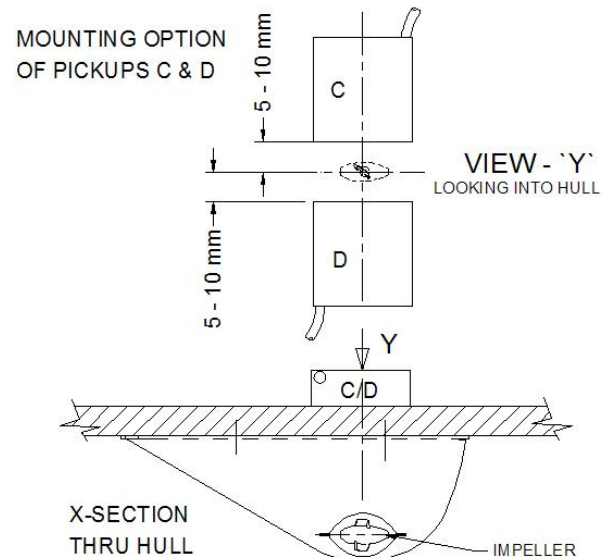
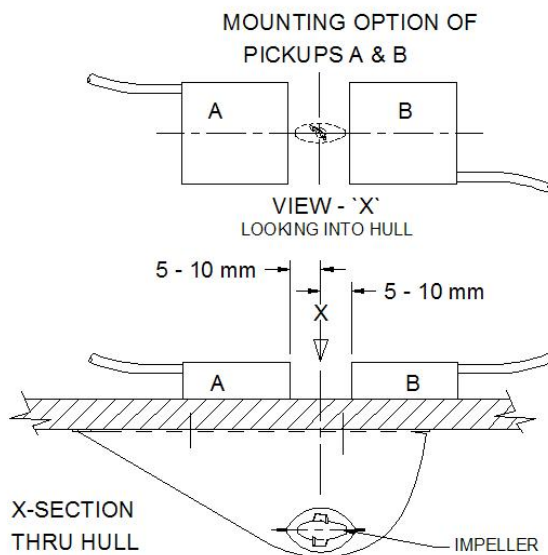
The speed sensor comprises a small magnetic impeller which mounts to the outside of the shell, and an electronics pick up/conditioning unit with cable to transmit speed signal to **SC (SC-R)** control unit. There are three options for the cable length: SC-XP-14m – 14 metres for eight, SC-XP-7m – 7metres for stern coxed fours, SC-XP-2m – 2etres for bow coxed fours. The pick up/conditioning unit can also be used with the Nielsen Kellerman impeller unit supplied with Speed Coach™ unit – however this would require a different calibration constant, and would have to be calibrated.

The nominal calibration figure supplied with sensor, assumes it is mounted 2.0 metres from the bow at the waterline (L=2m). However as this is only a nominal calibration, it is not critical, provided 'in boat' calibration is performed. It is important to mount the speed sensor as far forward as possible. As the sensor gets further from the bow, so does the degree of turbulent noise. This noise appears on the instantaneous speed curve, and reduces it's value for analysis. Practical access restrictions may limit how close to bow sensor is mounted. If access was not a problem then a distance less than the 2 metres eg between 1 and 1.5 metres would be optimal.



The mounting of the speed sensor impeller and pick up is shown in following diagram. Four mounting arrangements, A,B, C and D are shown. To assist in positioning the sensor in respect to the impeller, a magnet may be helpful – place magnet eg stroke sensor magnet, on inside of hull and determine position on outside of hull with a small piece of magnetic material eg a paperclip. The location of the pick up is relatively tolerant. However the alignment of the impeller fin is critical – it must be in line with the hull. It is helpful to use a long straight edge or a piece of string to align fin. It is generally recommended for the fin to be mounted at or near the centreline of the hull. The fin is normally affixed with double sided tape. If you are using the tape, carefully mark intended position of fin on hull with a pencil. It is important to position fin correctly first time -once backing tape is removed from fin, and it is stuck to

boat, it is difficult to reposition it. The fin has two holes in it, so it can also be fitted with 2 x 3mm screws. The advantage of using screws is it makes it easy to remove and refit fin. Some boatbuilders are looking at providing the threads built into the hull for this purpose. When double sided tape is used for affixing fin, the hull must be clean and dry. If the unit is removed from boat, then apply a steady force, to ease fin off. Wrenching it off without care may result in damage to the gel coat or paint finish.



The impeller spins within an enclosed 316 stainless steel fin. This fin provides mechanical protection for the impeller. The impeller is fitted with brass bushes, so it is unaffected by spinning at speed if boat is being towed. The impeller and fin should be kept clear of weed or other foreign material.

The pick up is connected to the SC via a 4 pin waterproof connector. The mounting of pick up is shown in diagram. It is supplied with double sided tape. The inside of boats is sometimes difficult to stick due to residual materials. It is important for the surface to be thoroughly cleaned. It may need a slight abrading to remove foreign materials and ensure a clean surface. An alcohol swab is also provided to assist. If the double sided tape does not work, then duck tape, or standard adhesive sealants can be used. The SC-XP speed sensor cable is available in several lengths, depending on boat type. This cable must be fed through the boat to the cox's position. If the boat is sectioned, the cable must be fed back from the Cox's position to the split.