

# REFIT INSTALLATION CHECKLIST



PRODUCT ALL SEAKEEPER MODELS

## OVERVIEW

The purpose of this document is to serve as a guideline for Seakeeper dealers to properly assess the feasibility of refitting an existing boat with a Seakeeper gyro. The Retrofit Checklist considers the required space, added weight, and effects on performance that come into play when installing a Seakeeper. Important factors such as electrical capacity, plumbing, and Seakeeper supporting structure are also discussed.

## REFIT CHECKLIST

1. The Small Boat Sizing Guide (for Vessels under 37' LOA) or a Performance Prediction Report should be reviewed for all installations. Contact your regional sales representative to check for existing reports or complete a Seakeeper Sizing Form with the vessel's principal characteristics. Overall dimensions for production boats are typically available, but waterline dimensions will likely have to be measured. The following principal characteristics are required to create a Performance Prediction Report: waterline length (LWL), waterline beam (BWL), full load displacement (FLD = dry weight + fuel + water + passengers), and GMt (if known).
2. Prior to installation a thorough survey of the vessel should be performed. The survey should include, but is not limited to the following items:
  - a. A review of the overall structure of the boat (stringers, bulkheads, hull, etc..) and surrounding areas of a potential Seakeeper installation.
    - i. Areas that have been previously refit / modified should be thoroughly reviewed.
  - b. Review of electrical capacity:
    - i. For AC Seakeeper models (Seakeeper 5 and up) installations: does the existing generator have sufficient capacity to support the Seakeeper power consumption?
    - ii. For DC Seakeeper models (Seakeeper 1, 2, 3) installations: is there space for additional batteries to support the Seakeeper? Dedicated Seakeeper battery bank or integrated house battery bank, See TB90603, DC Electrical Diagrams? Do the engines have sufficient alternator output to charge the batteries during operation? Is the battery charger rated to match typical Seakeeper power draw during spool up?
3. Identify potential Seakeeper installation locations, keeping in mind the following:
  - a. Modifications required to meet the structural requirements of a given Seakeeper unit, see Generic Installation Guides.
  - b. Access to the install location for routine maintenance and overhaul.
    - i. All Seakeeper models have minimum service clearances that must be met. These clearances can be found in the Installation Details Drawings for each model.
  - c. Distance of potential plumbing runs to and from to the gyro for cooling water. Each Seakeeper should have a dedicated seawater pump and intake.
  - d. Consider the longitudinal location of the Seakeeper on the boat. The Seakeeper should be installed aft of amidships, to minimize vertical accelerations while underway.
  - e. Hull and deck structural interferences. The installation location should not interfere with any structural members such as watertight bulkheads, deck structure, or supporting column / posts. A naval architect should be consulted if modifying of watertight structure is required.

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4. Conduct weight study to determine the effect of the Seakeeper weight on heel, trim, and underway performance.
  - a. Prior to the installation of a Seakeeper unit, it is strongly recommended that weights be added at the proposed location(s) of installation. These weights can be in the form of water bags, plastic drums with water, or lead weights and should mimic the weight and proposed location of the applicable Seakeeper model(s) as nearly as possible.
  - b. Any changes to the boat's static condition should be noted and reviewed with the client. If necessary, counterweights should also be considered as part of an off-center Seakeeper installation. Significant changes to trim or heel should be reviewed with a naval architect.
    - i. Excessive trim by the stern can have the following effects:
      1. Extend the amount of time required for a boat to plane off, and in some cases even prevent a boat from being able to plane off.
      2. Increase back pressure on engine exhaust systems by submerging them below the waterline, affecting engine performance and efficiency.
      3. Reduce transom freeboard, which increases the likelihood of swamping the cockpit when backing down.
  - c. A brief sea trial should be done with the added weight to assess the overall impact on vessel performance (speed, handling, planing ability, ect.) and ensure the boat still performs to the client's expectations.
5. For installations on production boats, the dealer should review the available options installed on the boat in question (when available), keeping in mind the following:
  - a. Weight of components such as generator, engines, drives, and other auxiliary equipment.
  - b. Location of optioned equipment on the boat.
  - c. Power capacity of the boat vs. the installed electricity consumers with the addition of the Seakeeper, both AC and DC models.
6. Following the completion of an installation the dealer is responsible for commissioning the Seakeeper unit(s) and registering the Seakeeper's warranty, both of which must be completed on the Seakeeper Partner Center. During the commissioning, Seakeeper requests the Dealer conduct a sea trial using the Sea Trial App to ensure the unit meets performance expectations and to help grow the Seakeeper sea trial database.

In summary, Seakeeper has numerous resources that can be referenced during installations such as installation manuals, technical bulletins, generic installation guides, and drawing manuals. The Applications Engineering Department is also available to support any questions related to installations. Installations that require significant structural modifications, cause significant changes in list or trim of the boat, or require the installer to alter / modify the watertight integrity of the boat should consult a naval architect. Naval architects can provide structural analysis, stability calculation that determine the effects on list, trim, and performance, while ensuring that the watertight integrity and stability requirements of the boat are met.