

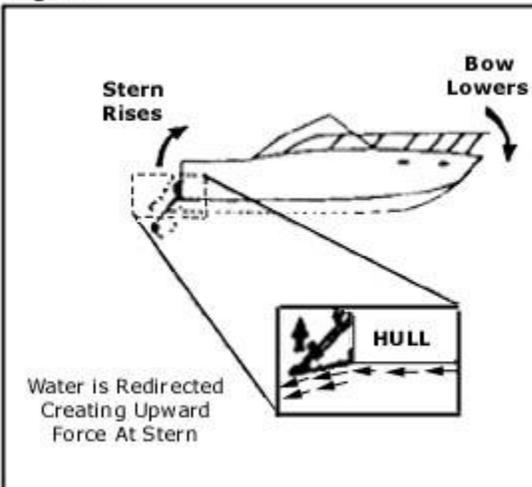
## How Insta-Trim Boat Levelers Work

Insta-Trim Boat Leveler tabs are two stainless steel planes installed on the transom. As the hydraulic cylinders deflect the trim tabs, water flow is redirected. This waterflow creates upward pressure under the trim tabs, raising the stern. As the stern rises the bow lowers (figure 1). Because proper trim tab surface area is essential, larger and/ or slower boats require larger trim tabs than smaller faster boats.

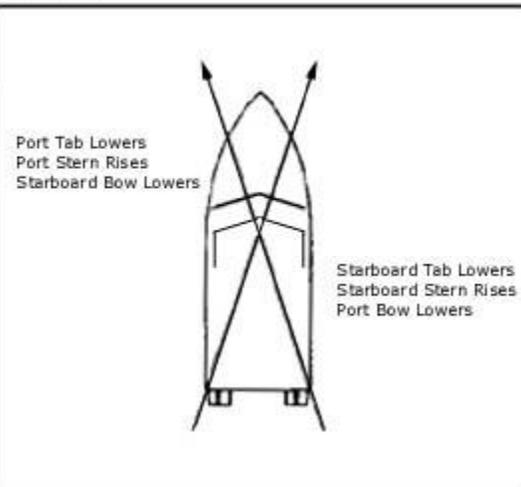
Insta-Trim Boat Leveler Tabs employ the force of hydraulics for smooth trimming action. When the trim tab rocker switch is pressed, electrical current is sent to the hydraulic motor pump unit. This signal activates the electric motor, creating fluid pressure. Valves on motor pump unit open, channeling the required amount of fluid to the actuators. When the trim tab rocker switch is released, the valve close, capturing the fluid in the actuators hydraulic cylinders. Thus trim tabs hold their position.

Insta-Trim Boat Leveler Tabs operate in reverse of what you might think. The port trim tab lifts the port stern which lowers the starboard bow. With properly installed trim tabs, you will not be as aware of this reverse function as the control function is based on the direction you wish to move the bow (figure 2).

**Figure 1**



**Figure 2**



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## Benefits

**Easily Installed** - Instatrim boat levelers come preassembled with mounting hardware.

They are easily and quickly installed, and a minimum of time is required.

**Level Ride** - Instatrim boat levelers put your boat in the proper trim and corrects listing, making for a smooth, enjoyable ride for you and your passengers.

**Increased Visibility** - A level ride improves the skipper's visibility. You and your passengers are more secure and boating safety is improved immeasurably.

**Environmentally Responsible** - Your smooth, level ride allows the engine to run more efficiently, increasing your mileage, saving fuel and stretching your boating dollars.

**Longer Boat Life** - In proper trim you stay on a plane at lower R.P.M.'s. Your engine doesn't labor and engine life is extended substantially. Less wear and tear on your craft ensures more years of boating pleasure.

**Improved Performance** - Your Instatrim boat levelers allow you to throttle back regardless of load and speed.

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## Safety Precautions

\*Do not overtrim, particularly at high speeds, as the bow will dig in and wave action may cause the boat to veer.

\*While Underway, do not move one trim tab significantly farther down than the other as undesirable listing could occur.

\*Use your trim tab rocker switch with caution.

\*For best maneuverability, trim tabs should be fully retracted in a following sea or when running an inlet.

\*Improper use of trim tabs can cause accident or injury

\*make periodic checks of hydraulic lines, switches, wiring and fluid levels, looking for corrosion, fatigue and proper oil levels.

Insta-Trim boat leveler tabs have significant effect on the operation and versatility of your boat, and nobody knows your boat better than you. So the best learning method is to spend time getting familiar with your boat's reaction to the trim tabs. As your experience with insta trim boat leveler tabs increases, so too will you enjoyment. Always operate your boat with safety first in mind, "It's Smooth Boating Ahead"!!!!

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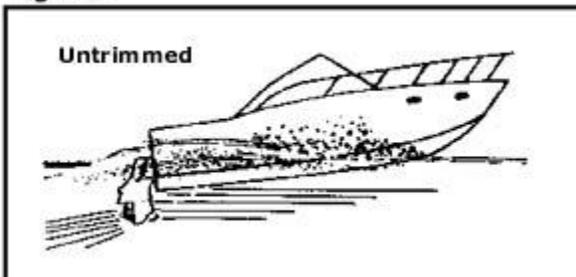
## How to Use Your Insta-Trim Boat Leveler Trim Tabs

The proper use of Insta-Trim Boat Leveler Tabs becomes very easy after a short time. Here are some general guidelines to get you started:

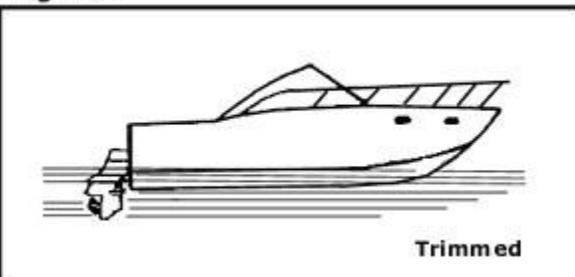
### Getting and staying trimmed

Most boats "break over" (get on a plane) at a particular speed. This speed is determined by weight distribution, water conditions, etc. Insta-Trim Boat Leveler Tabs enable your boat to plane at speeds lower than natural planing speed. As the throttle is pushed, the stern squats and the bow rises (figure 3). In short bursts, the trim tab rocker switches are pushed in the "BOW DOWN" position, moving both trim tabs. The boat reacts as the stern rises and the bow "breaks over", resulting in, among other things, increased visibility and speed (figure 4). If over trimming occurs as the boat gains speed, the trim tabs can be retracted by pressing "BOW UP". (When overtrimmed, the boat plows, reducing maneuverability).

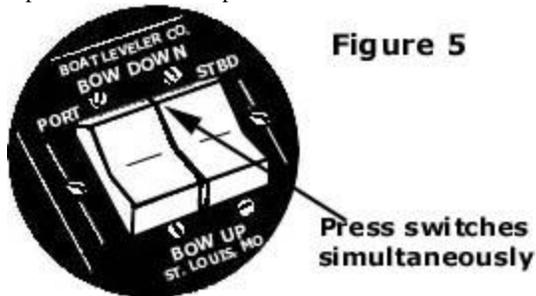
**Figure 3**



**Figure 4**



While learning to use trim tabs, begin by pressing the trim tab rocker switch (figure 5) in half second bursts for gradual trimming. A momentary delay occurs from the time the trim tab rocker switch is pressed to the time the boat reacts. To avoid overtrimming, allow enough time between bursts to permit the boat to respond to the trim tabs. This time depends on the boat's speed.



A good way to learn your boat's optimum attitude is to conduct a test by running lightly loaded at a fairly high speed in flat water. During this test, observe the bow in relation to the horizon. This situation should reveal the boat's best running attitude. Then, under normal operating condition, use the trim tabs to reproduce the same attitude achieved during the test. You will know the ideal attitude by the diminished wake, reducing laboring of engine(s), and the increased rpm's...all at the same throttle setting. When running in a chop or heavier seas, press "BOW DOWN", positioning the bow to cut through the waves. This action provides a drier, more comfortable ride. In a following sea or when running an inlet, the trim tabs should be **fully retracted** for maximum rudder response. When steering from a bridge or tower, a good trimming method is to watch the bow spray or stern wake and the roostertail. In an untrimmed condition, the spray from the bow is far aft on the hull, the wake is high, and the roostertail is pronounced. When trimmed, the bow spray is farther forward, the wake is reduced, and the rooster tail is smaller and farther behind the boat. In addition, when trimmed, the rpm's increase.

#### Correction of a List

Insta-Trim Boat Leveler Tabs are operated individually to correct a listing condition. The trim adjusts the boat's attitude in the direction the trim tab rocker switch is pressed. If the port bow is high, press the left-hand "BOW DOWN" direction on the trim tab rocker switch and the port bow lowers (figure 6). If the starboard bow is high, press the right-hand "BOW DOWN" direction and the starboard bow lowers. Do not think about what the trim tabs are doing; just concentrate on your trim tab rocker switch. Note: The boat should be trimmed fore and aft before correcting for a list.

#### Using Trim Tabs with Power Trim

1. Adjust the trim tabs to achieve planing attitude.
2. Use the power trim to position the prop path parallel to the waterflow
3. If necessary, re-adjust the trim tabs to "fine tune" (figure 7). Insta-Trim boat Leveler Tabs let you get the most out of your power trim because the trim tabs are trimming the hull while the power trim is trimming the prop.

#### Correction of porpoising

Press "BOW DOWN" in half second bursts. As the trim tabs deflect, porpoising subsides and speed should remain the same or increase. Only a slight amount of trim tab deflection should be necessary. (IMPORTANT: READ "SAFETY PRECAUTIONS")

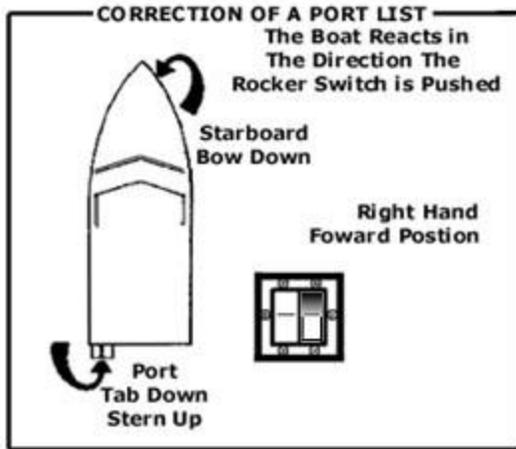


Figure 6

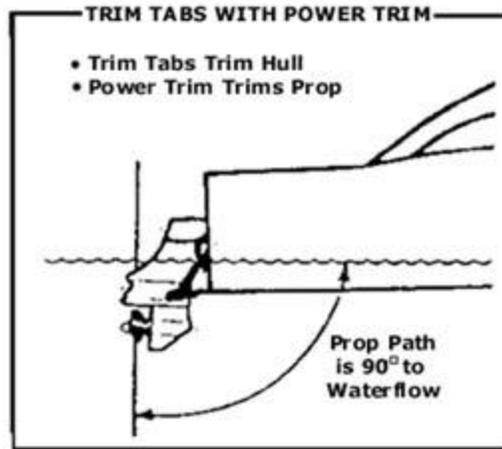


Figure 7

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## Part Information

**Trim Tabs:** 12 - Gauge 304 Stainless Steel

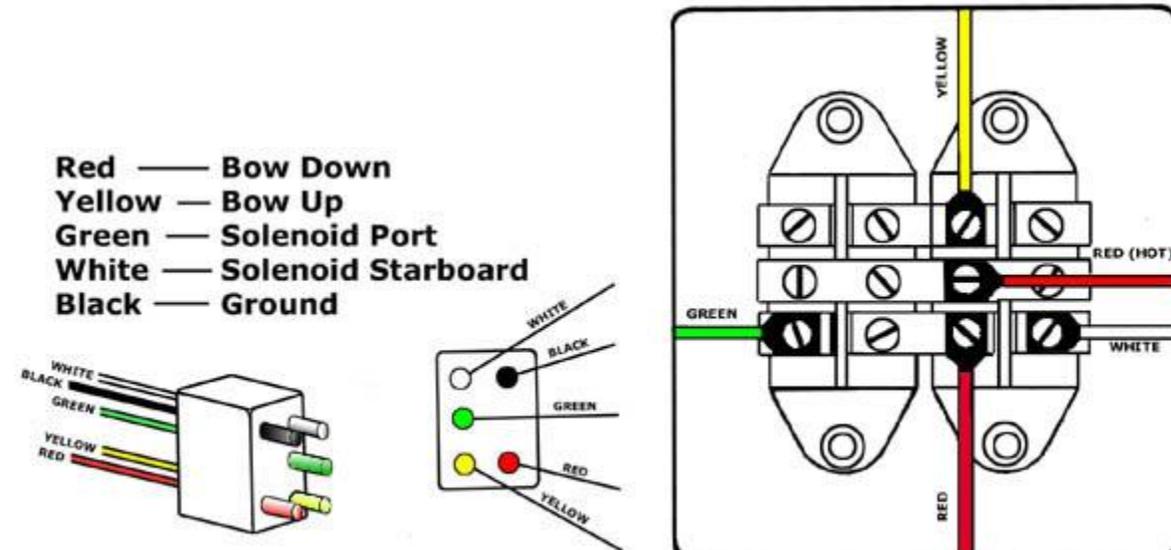
**Hydraulic Cylinders:** Made of High Impact Fiberglass-Filled Nylon

**Swivel Type Mounting Brackets:** Made of High Impact Fiberglass-Filled Nylon

**Trim Tab Rocker Switch:** Are hermetically sealed, and have silver contact points. 12-volt systems use 20-amp in-line fuse (24V & 32V use proportionally smaller).

**Hydraulic Hose:** Hose has 1/4 inch inside diameter 1/2 inch outside diameter 400lb.s working pressure and 1,600 burst pressure.

**Wire Harness:** Wire Colors and their functions:



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