

Autopilot Installation

When we purchased Inspiration, a YS 35, she had an Autohelm 3000 (2 complete units for redundancy) that attached to the Edson pedestal. It was a belt driven affair and the driven pulley was mounted to the wheel. This set up was philosophically troublesome and not deemed reliable for situation where it was absolutely necessary for it to perform in heavy seas. The lifelong engineer in me screamed for a more robust and reliable set up to which I could trust my life.

After a bit of research, the Raymarine autopilot was selected; in part for the seatalk buss and in part the kit-of-parts approach. Our final selection of components was the S3G Controller, 6002 Control Head and T2 Long Linear drive. This setup is designed for a maximum of 44,000 pound vessel and should surely be able to handle our 26,000 lb max Inspiration. The S3G controller has the fluxgate compass and a roll rate accelerometer to compensate for the slow reaction time fluxgate compass. The unit has two Seatalk busses and two NMEA IN/OUT pairs. Price was \$4,067.16 from <http://www.ultimatepassage.com>. Lisa of UP was wonderful to work with and I ordered it at 12:30 on Friday and it was on the door step on Monday afternoon at no extra cost. Great service at the least expensive price.

The unit was installed by Tower Marine in Douglas, Michigan and required additional parts that were ordered by Tower Marine (\$600) and the installation took a little longer than the time budgeted and cost \$2723.00 including the extra parts mentioned. The controller was installed in the port side lazarett on the aft side. I will have to take pictures to show how the linear drive was installed but it appears first rate. The fluxgate compass was installed at the mast access hatch in the bilge on the aft cross beam. A new Blue Sea 6 position breaker panel was installed in the instrument access panel behind the steps above the engine compartment and connected to a new 150 amp buss that was mounted in the engine compartment.

Sea trials were straight forward and the unit performed well. Subsequent usage for approximately 5 hours of sailing showed no unexpected performance in following seas and performed as expected in 5' -7' Lake Michigan seas with a 3 to 4 second wave period in winds of 20kt. The unit also performed well under power. We used it to point straight into the wind to raise the sails when all hands were forward. The current consumption appears to be around 10AH for rough seas. We are very satisfied with the unit.

This winter we will install the Garmin 492 Plotter, Icom 504 DSC radio and Raymarine ST60 wind system. The plotter and radio will talk to each other and the autopilot via NMEA buss and the wind indicator will talk on the Seatalk buss to the A/P. The block diagram is attached for your reference.

Lessons learned were that below decks autopilots are expensive and we wished we would have installed an 8 or more position breaker panel. In retrospect, I would have had the linear drive installed by Tower Marine and installed the rest myself. I have performed many hundreds of field installs of complicated radio/microwave gear and feel I would have done a better job with the electronics.

