



# **LINDGREN-PITMAN**

## **Wiring Techniques**

***Penn International 80 or 130,***

### ***Shimano Tiagra 80 Electric Reel Conversion***

Lindgren-Pitman electric drives for 80 or 130 Penn International or Tiagra 80 is designed to run on 24 or 32 V.D.C.

On a 24 or 32 V.D.C. operated vessel a simple single pole, single throw relay box is installed on the boat, preferably in the engine room, to operate the reel through a hand held control switch located on the reel.

If the vessel is 12 V.D.C. operated, then an auxiliary or slave battery must be installed which is totally isolated from the boats electrical system. A double pole, double throw relay box is then used to put the ships 12 V.D.C in series with the auxiliary 12 V.D.C. to supply the reel with 24 V.D.C. This relay box also has a parallel circuit to charge the secondary battery from the ships system. The charging system is automatic.

Either of these two styles of relay boxes are included in the price of the reel drive - whichever fits your boats electrical system.

The third form of operating your reel is by a 110 V.A.C. 60 hz., to 24 - 32 V.D.C. power converter. This is the most versatile method in that it gives the reel a high and low operating speed. The power converter can also be supplied in both a portable or bulkhead mount model.

The power converter is an option to the electric reel package. A relay needed to operate the electric Penn International is installed in the box with the price of the drive itself.

#### **Wiring Instructions:**

The wiring on the #12 - 3 yellow power cord is color coded as follows:

- Black - Positive (+)
- White - Negative (-)
- Green - Control

On the Hubbell 20 amp. plug, the reel connections are as follows:

- Black - Bronze Lug
- White - Silver Lug
- Green - Control



On a 24 or 32 V.D.C. boat, the relay box requires five (5) connections. Two (2) input connections from the boat 24 or 32 V.D.C. system, and three (3) output connections going to the reel receptacle. Use a 25 - 30 amp breaker or slow blow fuse on the input positive leg. Terminals on the relay box are labeled.

**On a 12 V.D.C. system using an auxiliary battery, the relay box requires seven (7) connections. Two (2) input connections from the ship 12 V.D.C. system, two (2) input connections from the slave 12 V.D.C. battery, and three (3) connections to the reel receptacle. A good quality 60 amp hour deep cycle battery should be used for the slave battery. This battery must not be connected to any other equipment or electronics. Use a 25 - 30 amp breaker or slow blow fuse on the ship input positive leg. Terminals on the relay box are labeled.**

**NOTE: A separate "Slave Battery" is required for each reel in a multi-reel setup.**

On a 110 V.A.C., 60 hz portable power converter, simply plug the converter into a standard 110 volt outlet and plug the reel into the converter box. On a bulkhead mount model, the A.C. in is directly wired. The three (3) output connections go to the receptacle for the reel.