

**INSTALLATION OF THE ARNESON
HIGH-PERFORMANCE TRANSDUCER
ON NAVICONTROL GOLD SERIE AUTOPILOTS**

Rel. 1.0

ARNESON-HP ENG.DOC



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Foreword

All crafts fitted with Arneson surface propellers have cylinders that drive the propeller axles, mounted in outboard position.

The position of the propeller axles (drive system) is measured by a transducer (multi-revolutions potentiometer) installed in a special box and connected to the drive cylinder by means of a flexible cable.

A special spring keeps the cable always taut, avoiding any slack on the drive of the transducer.

Moreover, Arneson provides a complete hydraulic kit with electrovalves for connection to the autopilot: the kit also includes a flow regulator so that the propeller shifting speed can be adjusted.

In these particular types of boats, Navicontrol supplies a kit (the Arneson HI-PERFORMANCE) with an enhanced and more reliable steering transducer.

Installation and connection to the Arneson Transducer-Box

Ensure that the Arneson Transducer-Box is correctly installed according to the Arneson Manufacturer's instructions.

Replace the original **Arneson Transducer** (2 wires) with the **Navicontrol Transducer** (3 wires).



Connect the wires according to the enclosed diagram, then perform the following operations:

A) Switch on the autopilot power and leave it to the STANDBY mode.

AP3003gold and AP303gold autopilots:

Start the installing procedures by pressing simultaneously for at least 2 seconds the keys **STBY** and **SET**. Release the two keys, press and release the **SET** key till visualizes the **FEEDBACK** function. The value must be **FB30**. If not, select this value by using the arrow keys. Exit the install menu by pressing the **STBY** key.

AP103gold autopilot:

Start the installing procedures by pressing  key for 5 seconds at least. Release the key, press and release  key till visualizes the **FEEDBACK** function. The value must be **FB3** (for FB30). If not, select this value by using the arrow keys. Exit the install menu by pressing the **STBY** key.

B) Put the TRIM angle (Arneson Surface Propellers) to 0 (zero) and turn the steering wheel till you set the propellers to the mid-ship position. Check the reading on the Autopilot Control Unit bargraph: it must be in the middle position (zero degrees). If not, turn the axial clutch of the potentiometer in order to reach that value (see drawing n. 1). A better precision in the adjustment of the zero value can only be reached after the execution of a trial at sea.

Turn the rudder from hardover to hardover and check the side (port and starboard) and the maximum value (about 18 / 20 degrees).

If the steering side is inverted (port instead of starboard and vice versa), swap the wires connected to the pin n.1 and n.2 of the **TB5** connector (Processor Box).

Now, enter the install menu and set the electronic rudder limiter (**RUDDER LIM** function) to value at least 2 degrees less than the maximum.

C) Put the steering system in the mid-ship position and press the **AUTO** key.

Using the COURSE control (knob or arrow keys), set a course of about 20 degrees to the right and check that the Rudder Angle also displays this shift in the usual direction; if this is not the case, invert the wires of the electrovalves (left for right and vice-versa).

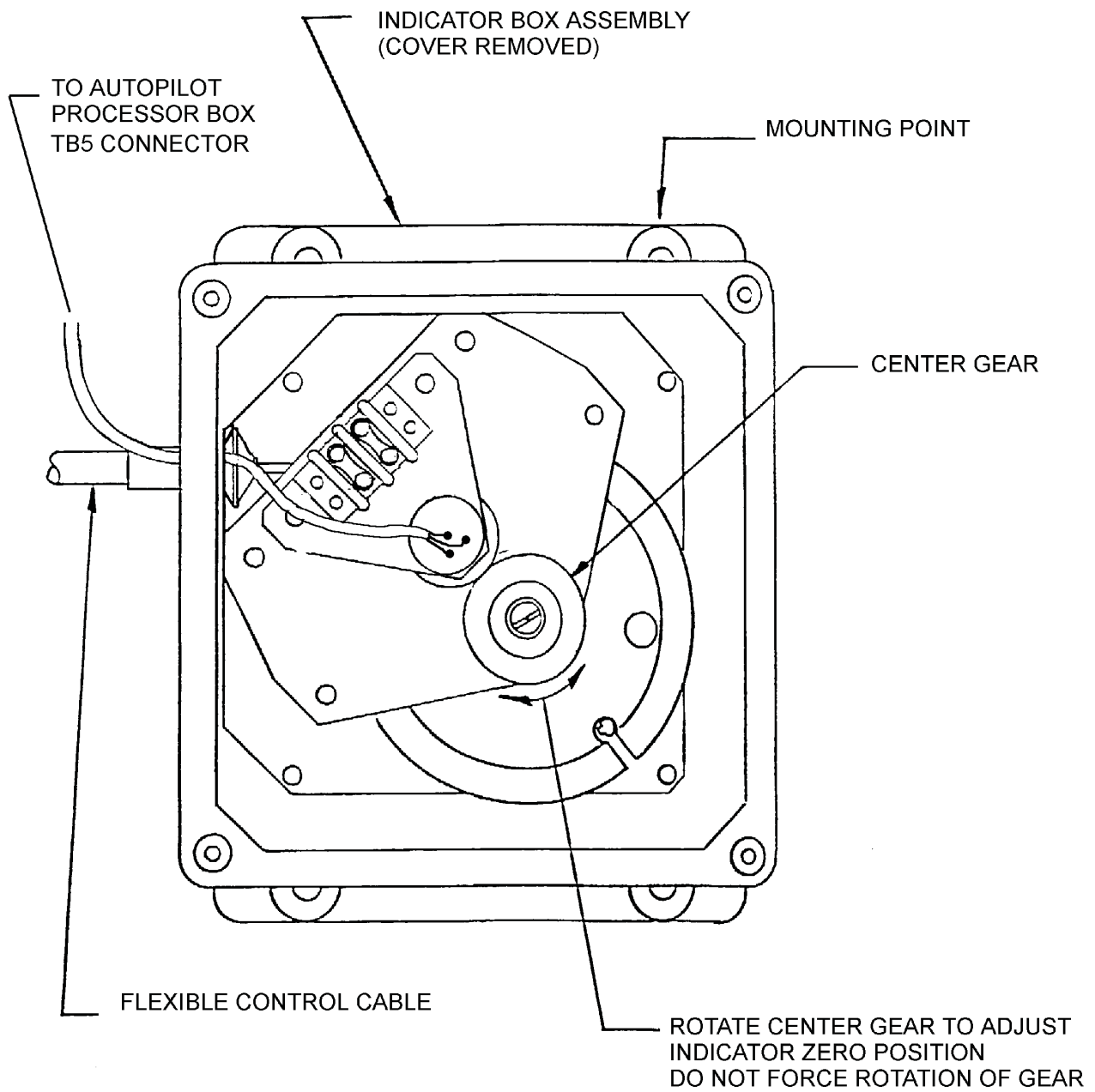
NOTE: Pay attention because, when the TRIM angle is shifted, this also changes the angle of the propeller axles and therefore the Rudder Angle value.

Before proceeding with the navigation tests it is necessary to adjust the flow regulator (Arneson propeller system) to set the axle shifting speed at about 3 degrees/second, corresponding to hardover-to-hardover time of about 12 seconds at the cruising speed. Normally, you will do this operation with the engines at lower rotation rate in the harbour, so you have to set it to about 16 seconds.

If this operation is not performed, the correct functioning of the autopilot is **not guaranteed**.

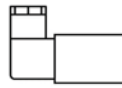
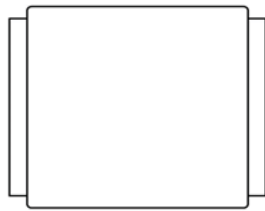
For any problem concerning the mechanical or the hydraulic parts, apply directly to the Arneson Service.

DRAWING #1

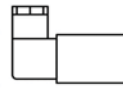


ARNESON SURFACE DRIVES wiring diagram

ARNESON
TRANSDUCER BOX

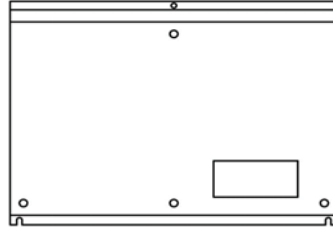


LEFT
SOLENOID

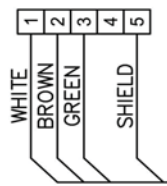


RIGHT
SOLENOID

NAVICONROL
PROCESSOR BOX
GOLD SERIE



TB5



TB11

