

# LF3000 LINEAR FEEDBACK WITH LFI3000 MK2 INTERFACE

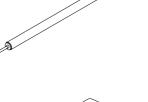
## **MOUNTING INSTRUCTIONS**

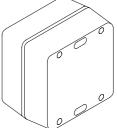
### LF3000 Linear Feedback (P/N 20187288)

Linear feedback unit for boats with outboard engine. Transforms the linear movement to an analogue signal. Supplied with 8,5 m cable and mounting clamps.

### LFI3000 Mk2 Linear Feedback Interface (P/N 20187951)

Interface unit for LF3000 Linear Feedback. Converts the analogue LF3000 signal to the standard digital feedback signal for the autopilot steering computer.





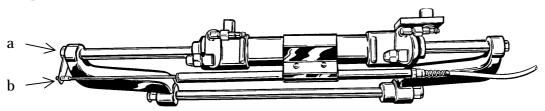
### Mounting

Note ! The rod of the LF3000 is not locked in place in the cylinder. If caution is not exercised it may slip out of its housing and end up over the side, so be careful!

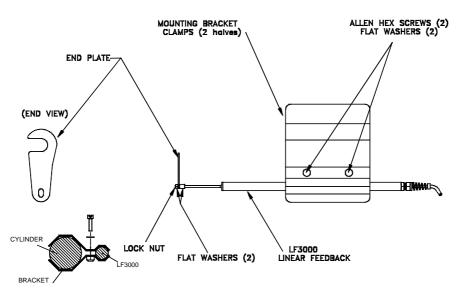
The LF3000 is a waterproof feedback unit. It has a 300 mm (11,8") stroke and comes with a special mounting bracket which secures the LF3000 to the cylinder of the existing outboard drive unit.

The 8,5 m (28') cable is terminated in the LFI3000 Mk2 Linear Feedback Interface according to the wiring diagram.

Centre the drives. Loosely secure the LF3000 to the supplied mounting bracket, across the centre of the drive unit cylinder. Either cylinder may be used if there is a dual set up. You may mount the feedback in either direction, i.e. the shaft of LF3000 may point to port or starboard.

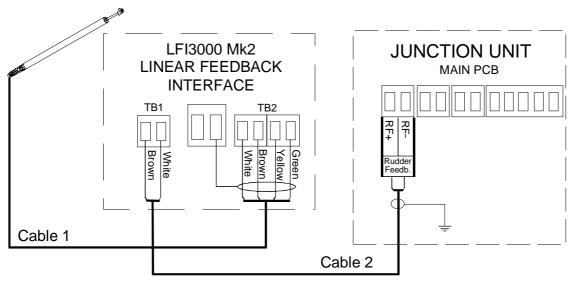


Loosen the end bolt (a) used to secure the cylinder to the drive unit mount. Insert the rod retaining assembly (b) (end plate) and retighten this bolt. Secure the feedback rod to the end plate using the two washers and cap nut provided. Adjust the location of the LF3000 Linear Feedback to allow full travel of the hydraulic cylinder without causing the endplate of the LF3000 hitting the end of the cylinder. Check that the outboard motor can be tilted freely. Tighten all nuts and the mounting bracket.



Turn the helm slowly by hand to the stops on either side, making sure that the rod does not bind up in any direction. Also, clamp cable to allow full engine movement to port and starboard. The mounting hardware provided with this system is meant to interface with Teleflex HC5340 cylinders and Hynautic K7 and K10 Cylinders. If you are attempting to interface to another system the hardware enclosed may not be appropriate! Contact your dealer to obtain the correct mounting kit.

#### **Electrical connection**



- 1. Connect cables as per above
- 2. Perform rudder feedback calibration as per autopilot manual
- 3. Align engines to centre position; "zero rudder".
- 4. Rev engines to 3-4000 rev/min and observe the rudder angle indicator on the autopilot, a 2° change in the reading should be accepted.
- 5. If the rudder angle exceeds 2°, repeat item 4 with screen on cable 2 connected to the centre block terminal. If this gives a better result keep the screen connected.

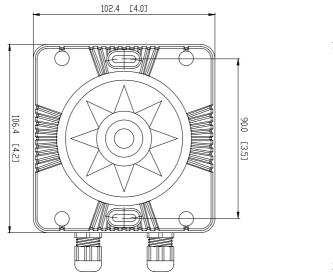
# **TECHNICAL SPECIFICATIONS**

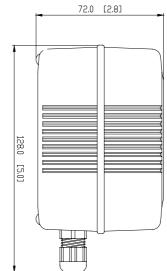
### LF3000 Linear Feedback

Stroke:	. 300 mm				
Operating principle:	. Variable differential transformer, excitation and signal conversion by separate LFI3000 Mk2 Interface unit				
Power:	. Supplied by LFI3000 Mk2				
Dimensions:	465 mm (18,3") x 22 (0,86") dia.				
Mounting:	Clamped to hydraulic ram				
Material:Rod: Stainless					
	Tube: Epoxy coated seawater resistant aluminium				
Environmental protection: IP67					
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	465.00 [18.30]				

### LFI3000 Mk2 Linear Feedback Interface

Supply:	From Junction Unit			
Output signal	Polarity independent variable frequency			
Frequency resolution	. Centre 3400Hz, $\pm$ 10Hz/degree equal to 1,7 mm travel			
Linearity:	. $\pm 3$ degrees up to 45 degrees of rudder			
Cable supplied:	. 1,5 m TP shielded cable			
Dimensions:	. See drawing			
Weight:	. 0,7 kg including cable (1,6 lbs.)			
Power consumption: 0,9 watts				
Temperature range:				
Operation:	. 0 to +70°C (+32 to + 158°F)			
Storage:	30 to +80°C (-22 to +176°F)			
Environmental Protection: IP56				
Mounting:	. Deck or bulkhead			
Material:	. Black ABS			





# **Document revisions**

Rev	Date	Written by	Checked by	Approved by
Α	17.11.1999	NG	IK	ThH
В				
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