

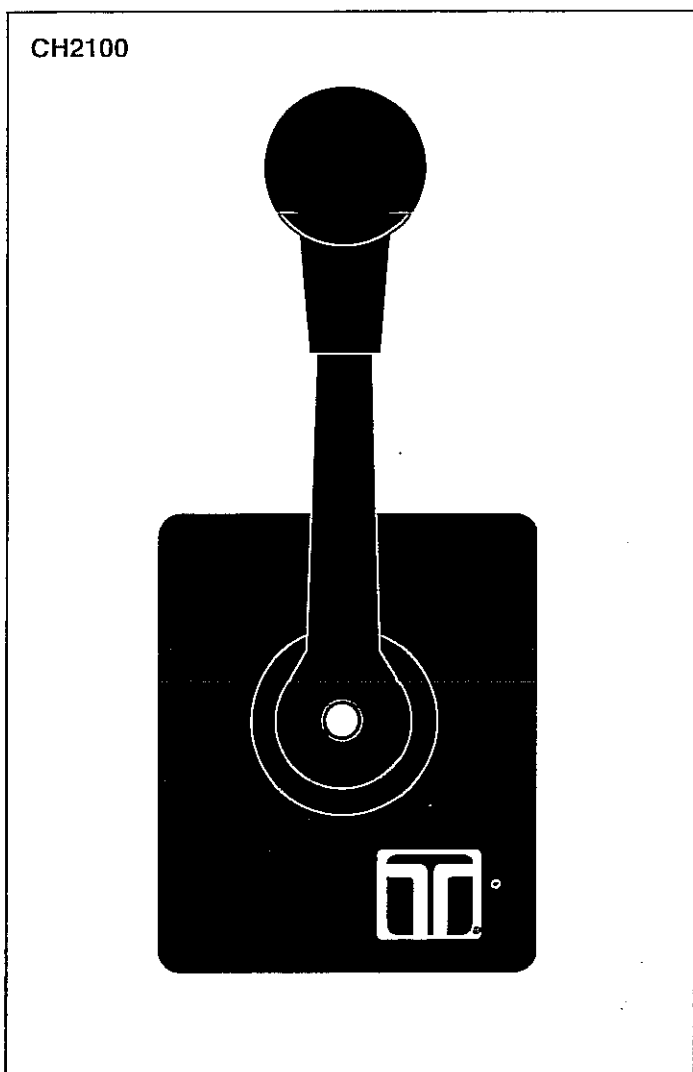
# Sail Controls

(sailboat  
inboard  
engines)

## CH2100

(single station side mount,  
using 3300 cables)

Great for Sail and More! This compact side mount control from Teleflex features single lever/dual action design. Its compact construction is *perfect for sailboats* and other applications in which space is at a premium. And, it's a drop-in replacement for controls sold by NW®, Onan®, TX®, Vetus®, Volvo® and others. Uses 3300/33 type control cables.



control:  
**CH2100**  
sailboat

(this engine control is for single station use only)

## Applications:

Virtually all sail engine applications in which a side mount control is desirable. Single lever, dual action design controls throttle and shift with one lever. Utilizes 3300/33 type "universal" engine control cables.

*Not suitable for use with Mercury® and OMC® OEM type control cables.*

## Features:

- ◆ Single lever, dual action for throttle & shift.
- ◆ Surface mount design for quick, tidy installation.
- ◆ Includes neutral warm up capability.
- ◆ Includes hardware for two 3300/33 control cables.
- ◆ Positive shift detents and neutral lock-out.
- ◆ Optional neutral safety switch.
- ◆ Weatherproof exterior, rugged diecast frame.
- ◆ Meets/exceeds all applicable industry standards.

## How to Measure Cable:

### For a New Installation:

*Outboards:* Measure from control along unobstructed cable routing to center of outboard. Add two feet to allow for loop which provides unrestricted engine movement. Round up to next whole foot and order required cable part number(s).

*Stern Drives and Inboards:* Measure from control along unobstructed cable routing to shift and/or throttle connection. Round this dimension off to the next whole foot and order required cable part number(s).

### For Existing Cable Replacement:

Measure Existing Cable from tip to tip in inches, and round up to next even foot. Order that length cable.

*NOTE: For examples and diagram, see "How to Measure" in Control Cables Section.*

## Engine Control:

Side Mount Sailboat Control

CH2100P

## Components:

3300 Universal Control Cable

CC172XX\*

## Options:

Optional Neutral Safety Switch

CA27090P

3300 Heavy Duty Control Cable

CC330XX\*

TFXTREME 3300 Control Cable

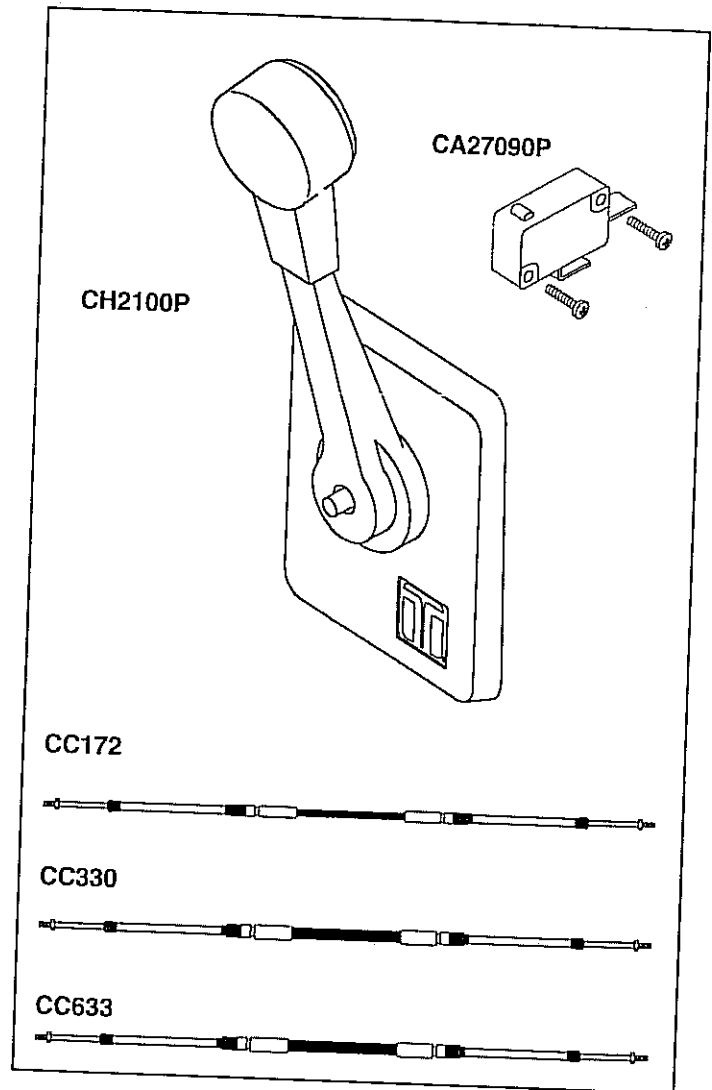
CC633XX\*

\* may require purchase of cable connection kit(s) to complete control system installation.

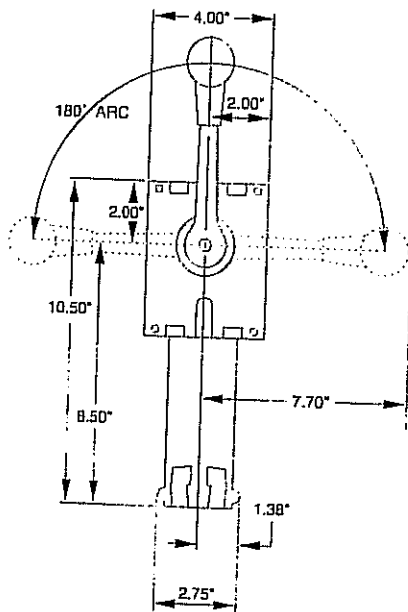
## Service Items:

Cable Connection Kits (see Connection Kits section)

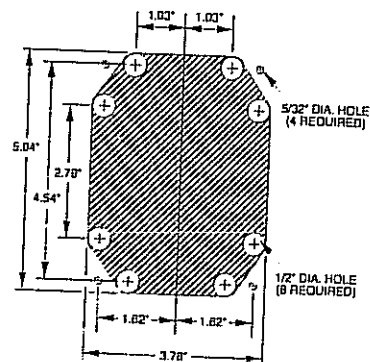
*NOTE: When properly installed, these engine controls will connect to various engines, utilizing universal type 3300 cables and engine connection kits. (These controls are not designed to use Mercury/Mariner® and OMC® OEM type control cables that have "eye" terminals at the control end of the cable.)*



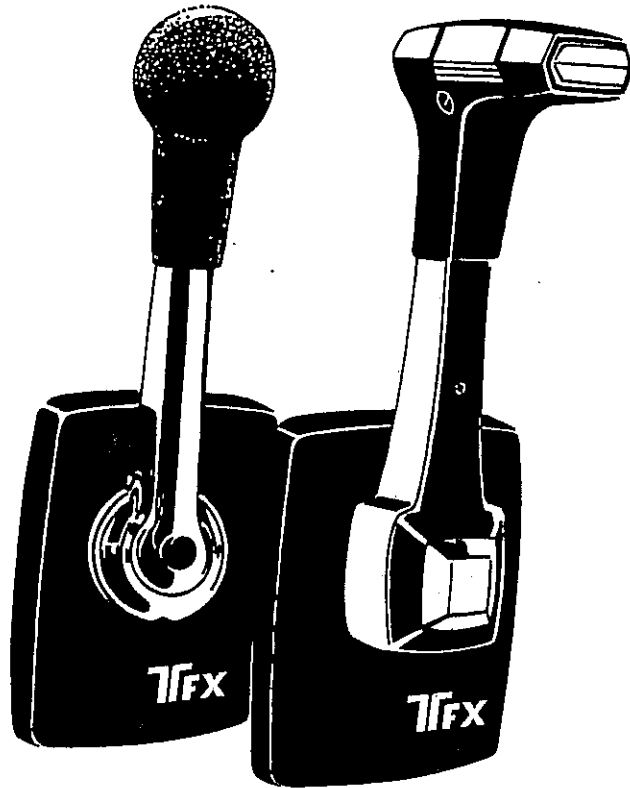
## MOUNTING DIMENSIONS:



## MOUNTING CUTOUT DIMENSIONS:



CH 2100 P



**TFX**  
M a r i n e

marine engine controls for  
side mounting

Installer

These instructions contain important safety information and must be forwarded to the boat owner.

## Preparations

**NB! Before starting the installation please read the instruction carefully**

When deciding on the best position for the control keep the control lever movements in mind. Ensure full throttle movement without obstruction at position chosen before the hole is cut. Also check that space required for installation is sufficient. Installed from the outside the mechanism, seen in fig. 1 & 2, requires a distance of min. 200 mm from the hull to the inner wall (see fig. 10 & 11). If installed from the inside a distance of 100 mm is enough.

The mechanism with attaching plate (fig. 3) needs the least space (appr. 100 mm) when installed from the outside. The wall or mounting plate must not be thicker than 12 mm.

Fig. 1 & 2

### B mechanism

- A Alternative gear cable holders
- B Gear lever
- C Gear cable connection for  $\pm 38$  mm travel
- D Gear cable connection for  $\pm 31$  mm travel
- E Adjustable brake
- F Neutral position knob
- G Throttle cable holder
- H Throttle lever
- J Screw
- K Washer
- L Attachment holes for neutral safety switch

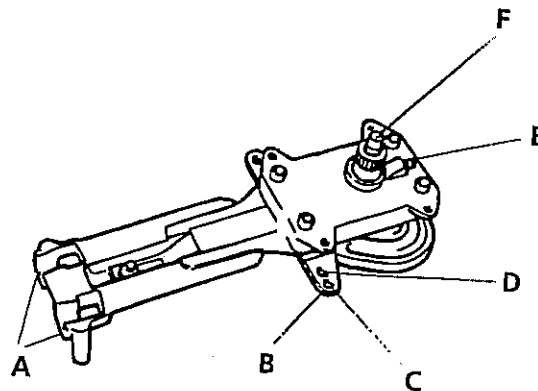


Fig. 1

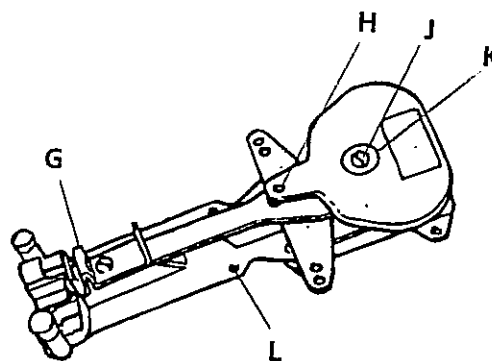


Fig. 2

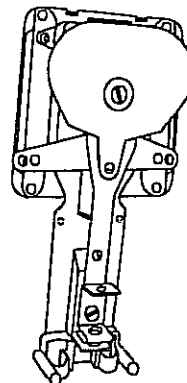


Fig. 3

Fig. 3 shows the mechanism with attachment plate. This mechanism is used for controls with trim switch function.

## Using the mechanism

Cable travel must be in accordance with the engine. Standard feature of the mechanism is pulling throttle function. This can be changed to pushing throttle function:

- Remove screw and washer (J&K fig. 2). Lift off the throttle lever (H fig. 2)
- Reposition screw and roller from A to B (fig. 4).
- Turn the throttle lever 180°, and refit. Note that at pushing throttle the roller (A fig. 5) must be in the inner groove ( B fig. 5).

The mechanism has a two-sided gear arm suitable for pulling as well as pushing gear function without prior modification. The gear cable should be connected to the side of the lever which gives the correct function. For standard travel i.e.  $\pm 38$  mm connect the gear cable to the outer holes (C fig. 1). The inner holes (D fig. 1) are intended for special applications requiring a travel of  $\pm 31$  mm.

### Trim switch

Fig. 6 describes the trim switch functions and electrical connection.

### Interlock function

As a safety feature the lever is locked when it reaches neutral position. Lift the saddle to release.

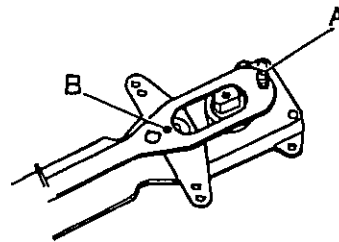


Fig. 4

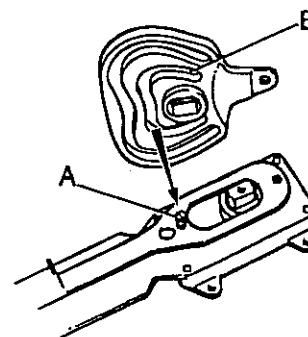
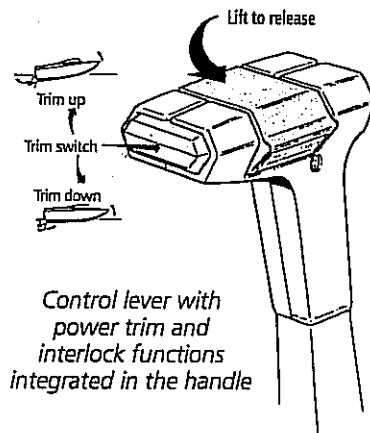


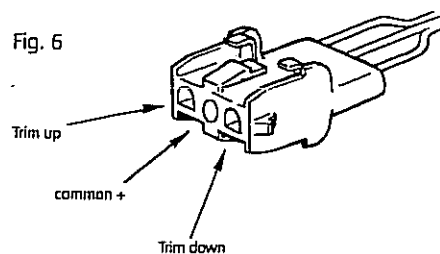
Fig. 5

### Interlock function



### Terminal on lever

Fig. 6



## Installing the control

Mark the cut out area using the templates (enclosed page). Make sure the control is placed in the correct position. Cut the hole and drill the holes for the attachment screws using a 4,0 mm drill.

### Connecting the cables

Check that the lever movements are correct.

**NB! Connect the cables to mechanism but do not attach them to the engine or gear until the complete control is installed.**

#### Attaching the throttle cable

- Remove the nut (A fig. 7) and both rubber seals (B fig. 7) from the cable.
- Push the cable through the bracket (C fig. 7)
- Put rubber seals and nut back in place.
- Secure the cable with the locking pin (D fig. 7)

**NB** the locking pin must be fitted with the wavy side towards the mechanism.

- Thread the pivot (A fig.8) on to the rod until 4 mm of the rod protrudes (see fig. 8). Secure the pivot by tightening the nut (B fig. 8)
- Connect the pivot to the throttle lever (E fig.7) and secure with the split pin. (F fig. 7)

**NOTE!** To avoid the shift arm from unintentional locking do not engage the push button on the control lever until the mechanism is mounted and the control cables are connected. Should it yet happen, the shift arm can be turned back to neutral position by hand. It is not possible to restore the shift arm to neutral by using the control lever.

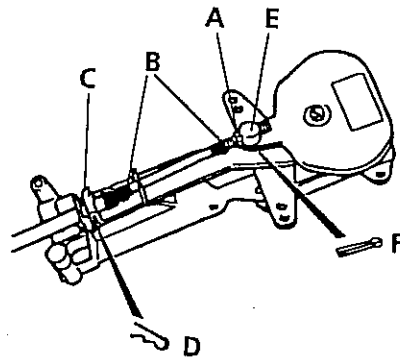


Fig. 7

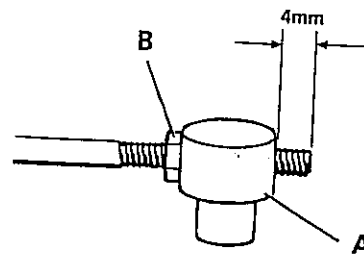


Fig. 8

#### Attaching the gear cable

- Push the gear cable through the holder and make sure the cable jacket hooks securely to the holder (A fig. 9).
- Thread the pivot on to the rod until 4 mm of the rod protrudes (see fig. 8). Secure the pivot by tightening the nut. (B fig. 8)
- Connect the pivot to the gear lever (B fig. 9) and secure with the split pin. (C fig. 9)

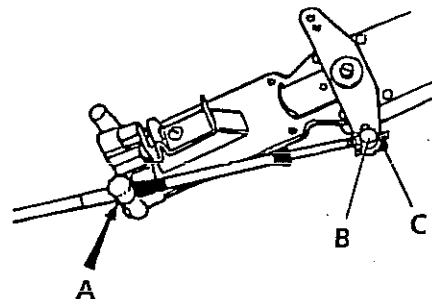


Fig. 9

## Installation of cables

The minimum control cable bend radius is 200 mm. Sharper bends will increase cable wear rapidly.

### Throttle cable

As the throttle cable moves back and forth during operation, it must not be clamped too close to the mechanism as this would prevent its motion. Subsequently this would lead to an overload of the mechanism with stiff shifting and premature wear as result. Hence, the throttle cable should be routed with one or two bends close to the mechanism for troublefree operation. Check that the throttle travel is free by pushing the shift release knob (F fig. 1 side 2) and moving the control lever. When correctly installed, the lever can be moved without noticeable resistance or a spongy feeling.

### Shift cable

The shifting cable is secured to the mechanism and can therefore be clamped to a bulkhead adjacent to the mechanism.

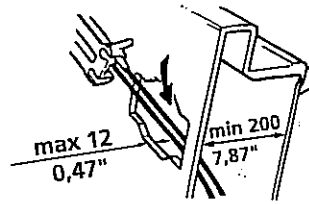


Fig. 10

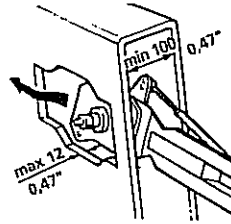


Fig. 11

- Guide the mechanism through the hole. Depending on whether the mechanism is fitted from outside or inside different techniques are used.

### Mounting from inside:

- Shift the mechanism to neutral position with the lever.
- Remove the lever and pull out the mechanism through the hole. (Fig. 11)

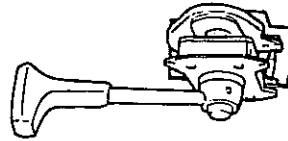


Fig. 12

### Mounting from outside:

Fit the lever and shift to forward. Push in the mechanism using the lever, see fig. 12, and position the mechanism as in fig. 13. Shift back to neutral position and proceed as per fig. 14 & 15

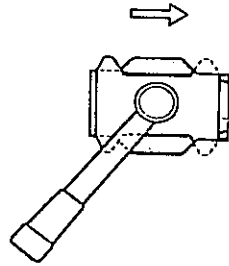


Fig. 13

### Mounting the mechanism with attachment plate:

Shift to forward through the entire operation. Needs least space when mounted from the outside. Different cutting template is used.

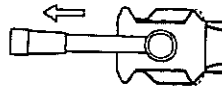


Fig. 14

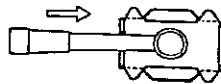


Fig. 15

- Secure the mechanism with the 4 selftapping screws supplied (Fig. 16) and remove the lever.

**Controls without attachment plate:**

- Fit the cover. Make sure the tabs snap properly into the lugs (B fig. 16).

**Controls with attachment plate:**

- Push the 2 cover halves sideways to meet at the lever shaft. Can be done with lever in place.
- Grease the shaft splines(A fig. 17) sparingly and install the lever.
- Tighten the clamp screw (C fig. 18) and make sure the lever is securely attached to the shaft.

**Don't tighten too hard, just attach the screw securely.**

- Check the lever travel.
- Move the lever to engaged gear position. Push the neutral position button ( B fig. 17 & 18) firmly in place.

Connect the cables to the throttle and gear levers on the engine. Use connections recommended by the engine manufacturer.

**Check that the cables move smoothly and that the throttle opens.**

**Adjusting the throttle brake**

The mechanism has an adjustable brake to counteract unwanted lever movement (happens mostly with diesel engines). Turning the adjusting screw (A fig. 19) clockwise increases the friction.

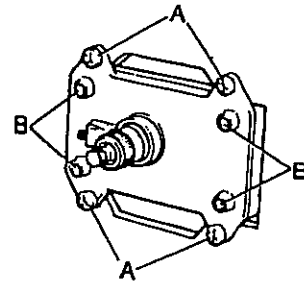


Fig. 16

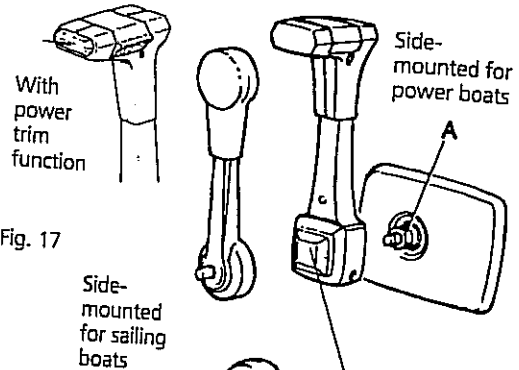


Fig. 17

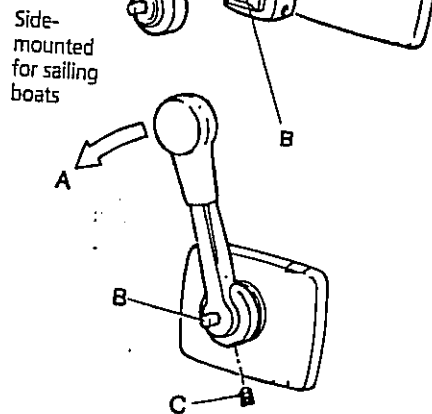


Fig. 18

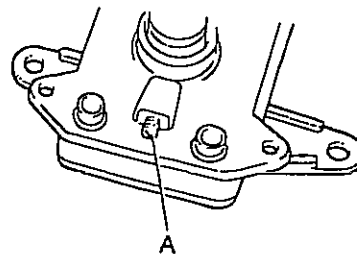


Fig. 19



## Accessories

### Neutral safety switch

•The engine control can be equipped with a neutral safety switch to prevent accidental starting with gear engaged.

**NB** The switch (A fig. 20) must be mounted with the electrical plugs (B fig. 20) turned away from the gear cable.

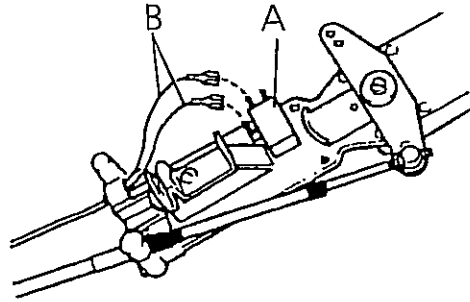


Fig. 20

### DS-unit ( Dual Station unit)

In a boat with two manoeuvring positions each position must be connected through a DS-unit to ensure proper function from both positions.

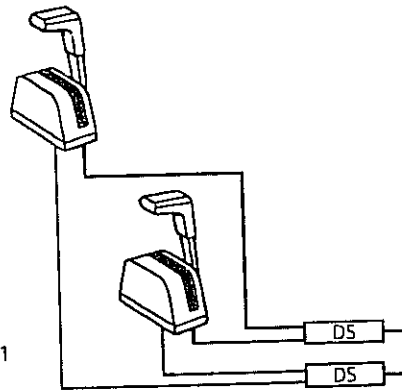
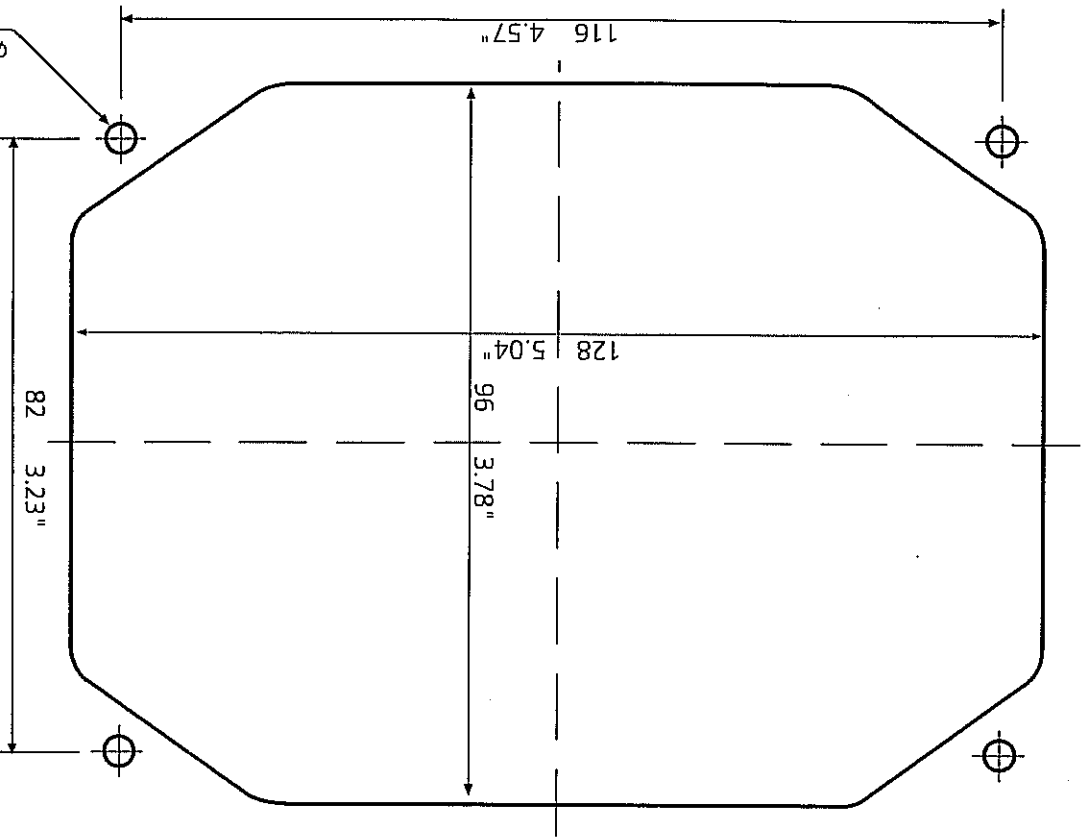


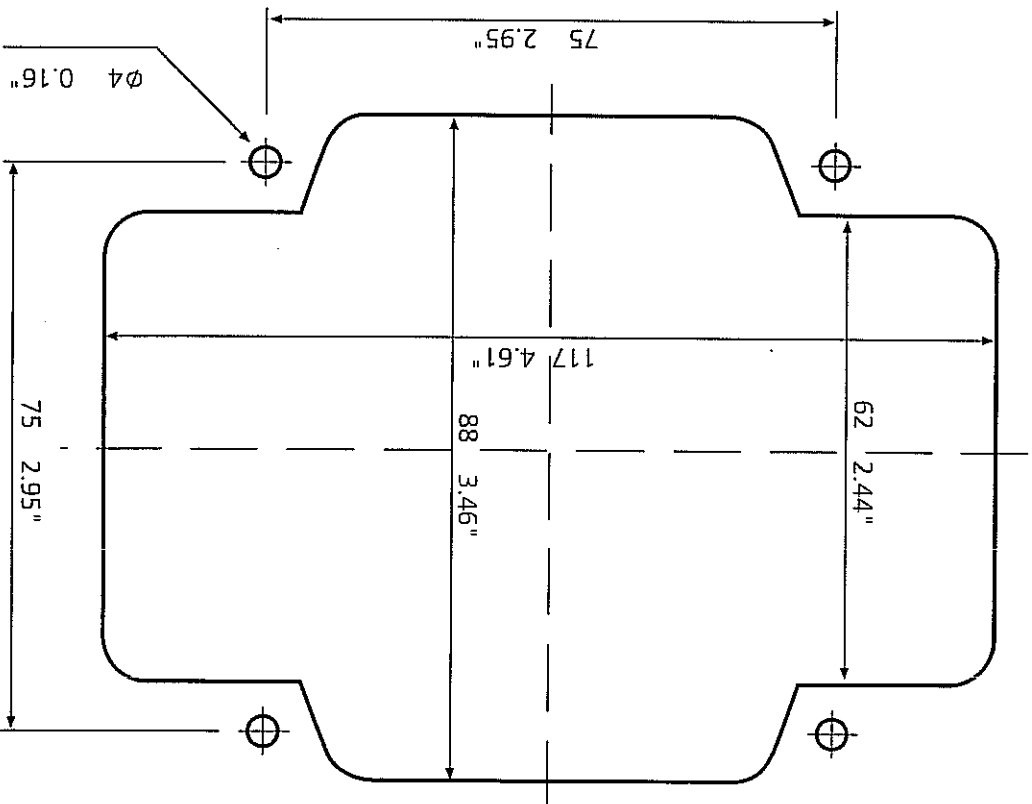
Fig. 21

HÅLTAGNINGSMALLAR / CUTTING TEMPLATES

*Not to scale*



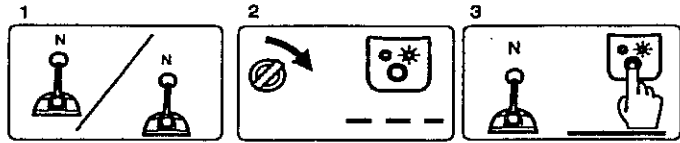
Mall för sidomonterat reglage med trim- eller låsfunktion  
Template for side mounted control with trim or lock function



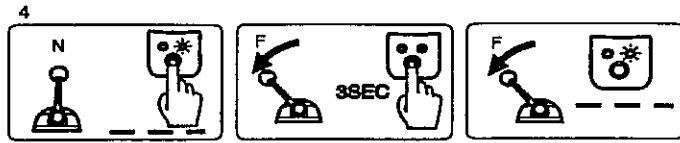
template for side mounted control

**Quick Guide to the Volvo Penta  
Electronic Control System**

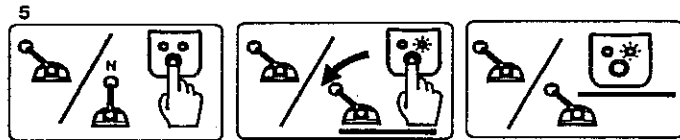
1. **Before starting the engine:** Put all control levers in neutral.



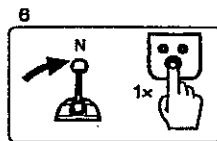
2. **Start the engine:** Green LED flashes.



3. **Activate the control:** With the control lever in neutral, push the button once and the green LED will light solid.



4. **Throttling without transmission engaged:** With the control lever in neutral, hold in the button and move the lever into forward gear. Release the button after 3 seconds and the green LED flashes long, with a 2-second pause. You can now throttle with the transmission disengaged.



5. **Station changeover underway:**

With the lever in neutral at the new station, hold the button in and slowly move the lever forward until the green LED lights. Release the button while the green LED is lit. The new station is now active.

6. **Jammed gear/throttle function:** Immediately move the lever to neutral. Press the button to release the jammed control. The control will now function normally again. Investigate the reason for jamming. See further under "Troubleshooting" in the User's Manual.

**Important flash codes**

- **Short red flash:** Main system voltage is diminished or absent. You are driving with the back-up system. The red LED continues to flash until main voltage returns to normal.
- **Double short red flash:** Indicates system failure. First try moving the lever to neutral and pressing the button once. If the boat still fails to respond after this, check the display on the electronic unit and follow instructions in the User's Manual.
- **Rapid short red flash:** System failure. Switch off all power for 10 seconds, then turn on the power again. Continue operation.
- **One short, one long red flash:** Jammed gear/throttle function. See point 6 above.
- **Long green flash:** Throttling without transmission engaged. See point 4 above.
- **Five short green flashes:** The control cannot be activated, i.e. another control station is active.
- **Very rapid green flash (3 Hz):** Ignition key functional failure underway. See page 15 in the manual.

**N.B.**

Please refer to the User's Manual for extensive and detailed information concerning operation, flash codes, etc.



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# Teleflex Marine Controls

