
GLENDINNING
Complete Controls
Operators Guide v0.1

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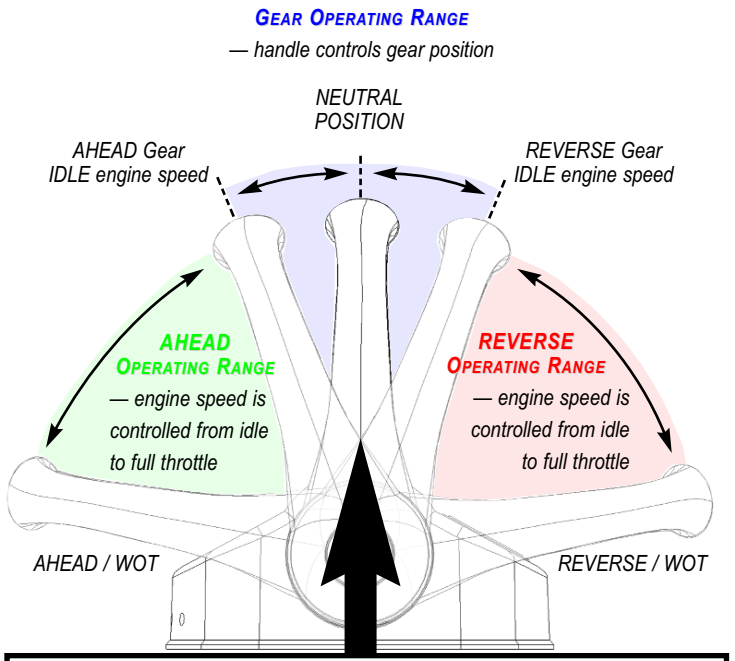
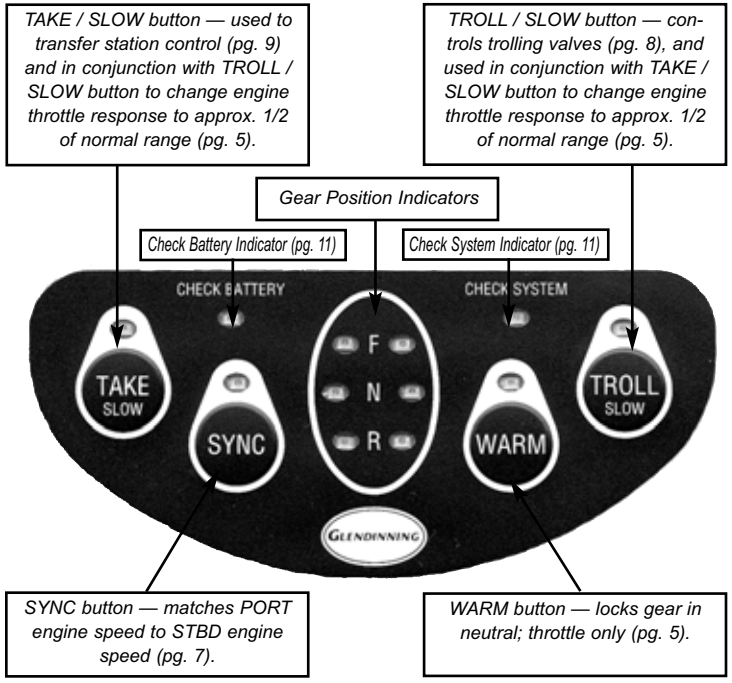
Control Head Operation



NEUTRAL TRANSMISSION POSITION INDICATED BY SPRING DETENT. WITH HANDLE IN THIS ORIENTATION, TRANSMISSION WILL BE POSITIONED IN NEUTRAL GEAR.

Keypad Operations



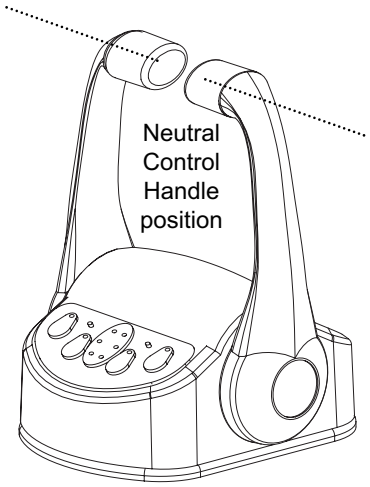
Light Dimming Feature — Press and HOLD the SYNC & WARM buttons together for approx. 4 seconds

System Startup

THIS PROCEDURE EXPLAINS THE PROCESS OF STARTING UP THE COMPLETE CONTROLS ELECTRONIC ENGINE CONTROL SYSTEM.

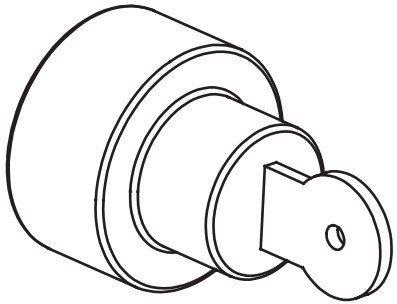
1 **CONTROL HANDLES** must be in the Neutral position prior to starting Control System.

Position control handles to Neutral before starting EEC system



2 **TURN ON EEC** with the ignition switch. Do not move handles while system is starting up.

Turn ON system by turning ON engine ignition switch



CAUTION: A brief diagnostic test will be performed at startup indicated by the TAKE light blinking slowly. DO NOT move handles during this test.

3 **EEC SYSTEM IS ON** when NEUTRAL indicator lights and TAKE & WARM lights are fully illuminated.

If ACTIVE light blinks slowly then control handles are NOT in Neutral. Move handles to Neutral and system will start

If all 4 keypad lights blink simultaneously, system is in ALARM Mode. Shutdown system and restart.

Cruise Mode

THIS MODE IS USED DURING NORMAL OPERATIONS AND PERMITS CONTROL OVER TRANSMISSION AND ENGINE SPEED USING THE CONTROL HEAD LEVERS.

1 **TAKE** light will be ON during normal "cruise" operation indicating station is "active" and in control of boat's propulsion system.

If TAKE light is fully illuminated (NOT blinking) station is "active" and in control of engine's gear and throttle (Neutral lights will only be ON if gear is in neutral position).

If TAKE and GEAR lights are blinking every 2 seconds, station is INACTIVE and not in control of engine's gear and throttle *(for multi-station applications ONLY)*.

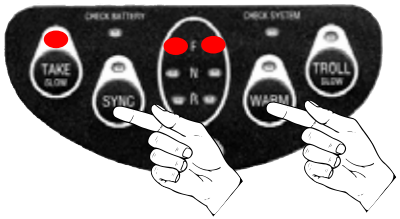
If all 4 keypad lights blink simultaneously, system is in ALARM Mode.

2 At system startup the engine's gear will be immediately placed in WARM mode (pg 5). Press and Release WARM button one time to regain control of engine gear.

Press & Release WARM to regain control over engine gear

Ease control handles into throttle range - you are now in normal Cruise Mode

3 If the lights on the keypad are too bright you can dim the lights by Pressing and holding the 2 middle buttons for 4 seconds. Repeat this process to return keypad lights to normal brightness.



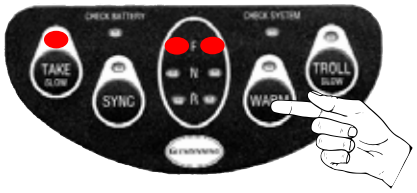
PRESS & HOLD 2 middle buttons (SYNC & WARM) simultaneously for 4 seconds to dim keypad lights

Cruise Mode

THIS MODE IS USED DURING NORMAL OPERATIONS AND PERMITS CONTROL OVER TRANSMISSION AND ENGINE SPEED USING THE CONTROL HEAD LEVERS.

1 During normal CRUISE Mode you can **"bump"** engine throttle settings in small increments while handles are in gear above IDLE.

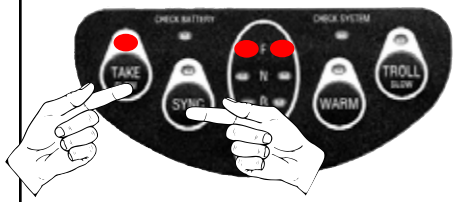
Press & Release WARM to increase engine speed



Press & Release TROLL to decrease engine speed

2 During normal CRUISE Mode you can **change the engine idle speed** settings. Idle speed can only be changed while control handles are in Neutral or Gear Idle detents.

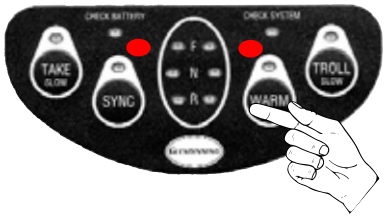
Press & Release TAKE & SYNC to increase engine speed



Press & Release TAKE to reset to lowest idle engine speed

3 During normal CRUISE Mode you can enter WARM Mode or SYNC Mode by:

TO ENTER WARM MODE (pg. 4) bring control handles to the NEUTRAL position and PRESS & RELEASE WARM button. WARM light will be ON.



TO ENTER SYNC MODE (pg. 5) move handles out of Neutral in the ahead direction, PRESS & RELEASE SYNC button.

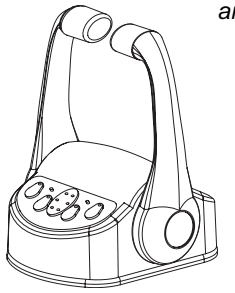
SYNC light will be ON.

Warm Mode

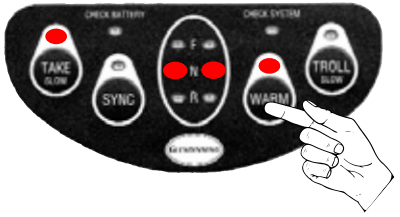
THIS MODE LOCKS THE TRANSMISSION IN NEUTRAL WHILE ALLOWING ENGINE THROTTLE TO BE INCREASED OR DECREASED.

1 **To enter WARM Mode** Control Handles MUST be in NEUTRAL. **PRESS and RELEASE** WARM button one time.

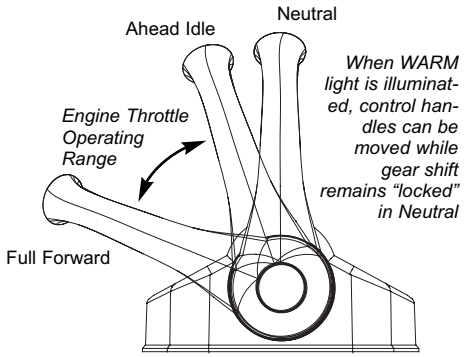
When Control Handles are in the NEUTRAL position then press WARM button once.



The keypad should look like the illustration below.



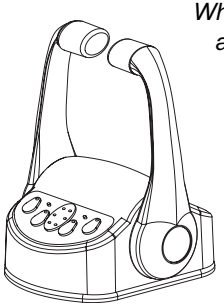
2 **ADVANCE CONTROL LEVER** into engine throttle operating range. The engine gear will remain "locked" in neutral while engine speed is increased.

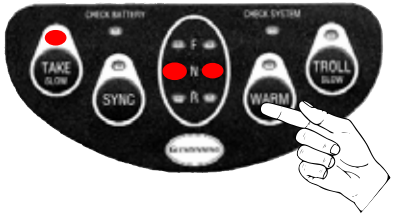


It is STRONGLY RECOMMENDED that the system be placed in WARM Mode at all times when boat is docked!

3 To exit WARM Mode and regain gear operation, bring handles back to neutral and **PRESS AND RELEASE** WARM button one time.

When Control Handles are in the NEUTRAL position and you press the WARM button once — the keypad lights should look like the illustration below.

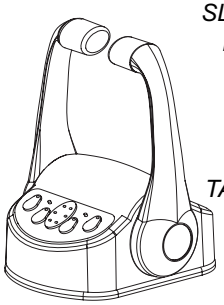




Slow Mode

CHANGES ENGINE THROTTLE RESPONSE. FULL HANDLE MOVEMENT WILL ONLY RESULT IN APPROXIMATELY HALF OF NORMAL FULL THROTTLE ENGINE SPEED.

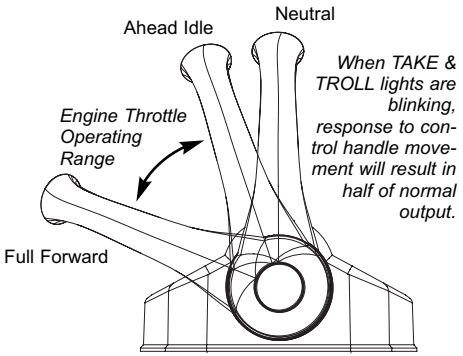
1 **To engage** Control Handles MUST be in NEUTRAL. **PRESS and RELEASE** TAKE & TROLL buttons simultaneously.



SLOW Mode can only be engaged / disengaged when control handles are in the Neutral position.

TAKE & TROLL lights will blink when EEC system is in SLOW Mode.

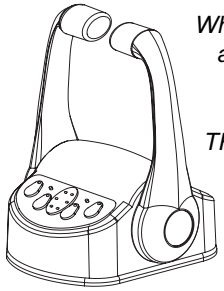
2 **Once engaged, ADVANCING CONTROL LEVER** into engine throttle operating range will ONLY result in approximately half of normal throttle output.



When TAKE & TROLL lights are blinking, response to control handle movement will result in half of normal output.

This mode is recommended for "NO WAKE" posted areas usually around dock and intracoastal waters.

3 To disengage SLOW Mode, bring handles back to neutral and **PRESS AND RELEASE** TAKE & TROLL buttons simultaneously.

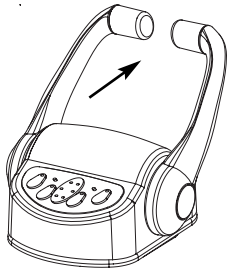


When Control Handles are in the NEUTRAL position and you press the TAKE & TROLL buttons simultaneously — the system will return to normal CRUISE Mode.

Sync Mode

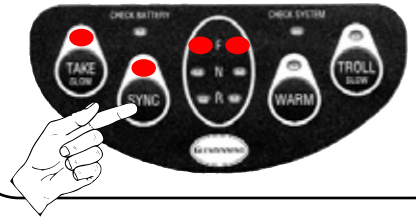
WHILE SYNC MODE IS ENGAGED, SYSTEM WILL AUTOMATICALLY CONTROL PORT ENGINE SPEED TO EXACTLY MATCH STARBOARD ENGINE SPEED.

1 To engage, handles should be in or above IDLE — **PRESS & RELEASE the SYNC button one time (Sync light will illuminate).**



SYNC Mode can only be used when both engines are in the Ahead gear and handles are approximately the same speed — within 10% of total travel

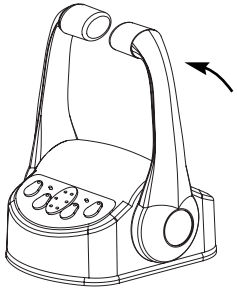
SYNC light will be ON when in SYNC Mode



2 When SYNC function is energized, the boat operator controls the STBD engine speed ONLY. The EEC3 system will automatically control the PORT engine to match the STBD engine.

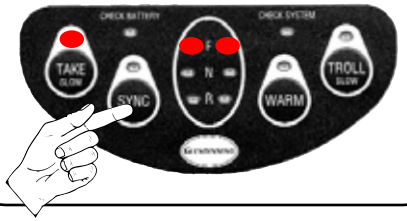
PORT *STBD*

3 To disengage, bring port handle to match position of starboard engine control handle and **PRESS AND RELEASE** SYNC button one time.



SYNC Mode will be automatically disengaged if BOTH handles or if the STBD control handle are moved to NEUTRAL position

SYNC light is OFF when SYNC Mode disengaged - system now in Cruise mode

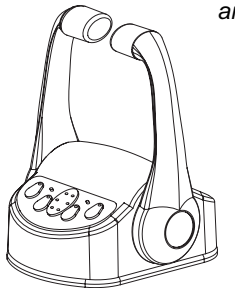


Troll Mode

THIS MODE ALLOWS THE BOAT OPERATOR TO CONTROL THE POSITION OF THE TRANSMISSION TROLLING VALVES (IF EQUIPPED).

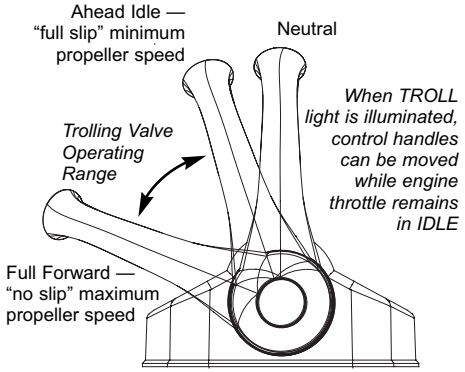
1 **To enter TROLL Mode** Control Handles MUST be in NEUTRAL. **PRESS and RELEASE** TROLL button one time.

When Control Handles are in the NEUTRAL position then press TROLL button once.



The keypad should look like the illustration below.

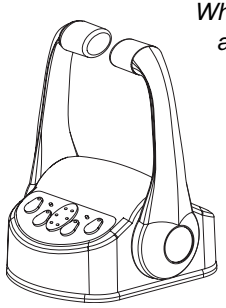
2 Trolling valve position is controlled by the movement of the control handles. Engine throttle speed is maintained at IDLE while system is in TROLL Mode.



Engine IDLE speed settings may be adjusted during troll valve operation (see Cruise Mode, pg. 4 for more details).

3 To exit TROLL Mode, bring handles back to neutral and **PRESS AND RELEASE** TROLL button one time.

When Control Handles are in the NEUTRAL position and you press the TROLL button once — the keypad lights should look like the illustration below.



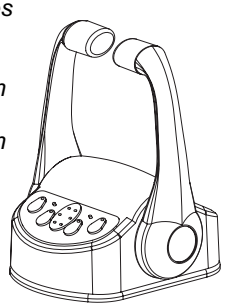
Station Transfer

THIS PROCEDURE ALLOWS PROPULSION SYSTEM TO BE TRANSFERRED FROM ONE HELM CONTROL STATION TO THE OTHER.

1 **PRESS AND RELEASE** TAKE button one time, at the helm station where you want to take control (TAKE light will begin to flash).

TAKE LIGHT & APPROPRIATE GEAR LIGHTS WILL FLASH WHEN TAKE BUTTON IS PRESSED AT INACTIVE STATION

2 **CONTROL HANDLES** must be in an appropriate handle position at station taking control in order for transfer to be completed (see chart below). When handles are in an appropriate handle position for transfer, the TAKE light will begin to flash quickly.

Control handles at ACTIVE station can be in any position prior to transferring control to another station 	*Control handles at "station taking control" MUST be in an appropriate handle position to transfer control to it* 
Active Station	**Station taking Control**
In NEUTRAL	**In NEUTRAL**
In GEAR / IDLE	**In Neutral or same GEAR / IDLE**
In GEAR / with speed	**In Neutral or same GEAR / same or slower speed setting**

3 **PRESS AND RELEASE** TAKE button a second time. The new Control station is now the Active station and has control of the engine and transmission.

TAKE LIGHT & APPROPRIATE GEAR LIGHTS WILL BE FULLY ON AFTER TAKE BUTTON IS PRESSED FOR THE SECOND TIME

Station Transfer

LIGHT SEQUENCE AT STATION TAKING CONTROL DURING STATION TRANSFER PROCESS

1 **PRIOR TO PRESSING TAKE BUTTON at station where you wish to take control, the TAKE light & appropriate gear light will blink once every 2 seconds (inactive station heartbeat).**

ACTIVE LIGHT & APPROPRIATE GEAR LIGHTS WILL FLASH ONE TIME EVERY 2 SECONDS

2 **AFTER PRESSING and RELEASING the TAKE button once, the TAKE light & appropriate gear lights will blink — blink rate will depend on control handle setting at station taking control.**

SLOW BLINK — HANDLES NOT IN APPROPRIATE POSITION.

QUICK BLINK — HANDLES ARE IN THE APPROPRIATE POSITION, PROCEED TO STEP 3.

3 **Control transfer is COMPLETE after PRESSING and RELEASING the TAKE button a second time, while TAKE & appropriate gear lights are quick flashing.**

SOLID **TAKE** LIGHT INDICATES TRANSFER IS COMPLETE.
NEW STATION IS NOW IN CONTROL.

Warning Mode

DURING DIAGNOSTIC CHECK, THE EEC SYSTEM WILL TRY TO WARN BOAT OPERATOR WHEN A PROBLEM IS DETECTED WHILE STILL OPERATING IN UNAFFECTED FUNCTIONS.

	1 SYMPTOM	2 ACTION
CHECK BATTERY light blinks  **CHECK BATTERY INDICATOR WILL BLINK WHEN BATTERY VOLTAGE CONDITIONS EXIST THAT ARE QUESTIONABLE.**	1) SLOW BLINK — combined battery input is too low. 2) QUICK BLINK — combined battery input is too high.	1) Determine cause of input power problem. 2) System will continue to operate normally, unless battery exceeds system parameters. If this occurs system will be switched into ALARM Mode (see pg. 12).
CHECK SYSTEM light blinks  **CHECK SYSTEM INDICATOR WILL BLINK WHEN A POSSIBLE PROBLEM HAS BEEN DETECTED WITHIN THE SYSTEM.**	1) Diagnostic tests have detected that part of the control system is not functioning normally.	1) Restart control system (turn OFF/ON). Move handles to Neutral or Idle detent. 2) Determine part of system not operating properly (ie. gear, throttle, troll, etc.). 3) Utilize alarm code recovery procedure to discover source of problem (see troubleshooting section of manual).

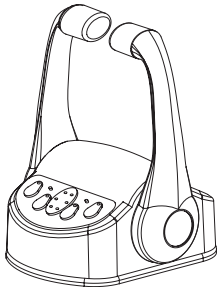
Alarm Mode

WHEN ACTIVATED THE CONTROL SYSTEM WILL NOT CONTINUE TO OPERATE. THE TRANSMISSION WILL GO TO NEUTRAL AND ENGINE SPEED WILL GO TO IDLE.

During operation of the EEC, the system will continuously monitor system functions and will alert the operator if a system problem has been detected. When ALARM Mode is activated, the control system will NOT continue to operate. In absence of a control signal from the EEC, transmission will go to Neutral and engine throttle will go to idle.

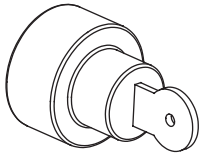
AN **ALARM** IS INDICATED WHEN ALL **4** KEYPAD LIGHTS "BLINK" SIMULTANEOUSLY

When the system is in ALARM Mode, return the MAIN STATION control handles to Neutral position



Return ignition switch to OFF

Restart system



DIFFERENCES BETWEEN A "WARNING" AND AN "ALARM"

TYPE	KEYPAD LIGHTS	ENGINE THROTTLE	ENGINE TRANSMISSION
Warning	only light that is ON "blinks"	stays in commanded position	stays in commanded position
Alarm	all keypad lights "blink" in unison	goes to IDLE	goes to NEUTRAL

If any alarm occurs, the cause of the alarm must be determined as soon as possible after returning to the dock. The alarm codes may be recovered to assist in troubleshooting. Contact Glendinning Marine Products for assistance.

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The above number is a digital pager available during evening hours and/or weekends. Enter your phone # after you hear 3 beeps. Service personnel will return your call.

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