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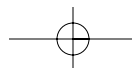
DURING DIAGNOSTIC CHECK, SYSTEM WILL TRY TO WARN OPERATOR WHEN A PROBLEM IS DETECTED WHILE STILL OPERATING IN UNAFFECTED FUNCTIONS.

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DURING OPERATION THE EEC CONTINUOUSLY MONITORS SYSTEM FUNCTIONS AND WILL ALERT OPERATOR IF A SYSTEM PROBLEM IS DETECTED.

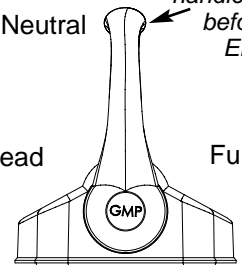




PG 10





SYSTEM STARTUP




THIS PROCEDURE EXPLAINS THE PROCESS OF STARTING UP THE EEC-2001 CONTROL SYSTEM.


<p>1</p>  <p>Position control handle to Neutral before starting EEC system</p> <p>Neutral</p> <p>Full Ahead</p> <p>Full Astern</p> <p>GMP</p> <p>CONTROL HANDLES must be in the Neutral position prior to starting Control System.</p>	<p>2</p>  <p>TAKE and TROLL lights on</p> <p>TURN ON EEC power switch. DIAGNOSTIC TEST will be performed by the EEC System (indicated by TAKE and TROLL lights illuminated). Do not move handles while lights are illuminated.</p>	<p>3</p>  <p>TAKE light fully illuminated (Gear Position Indicators)</p> <p>EEC SYSTEM IS OPERATIONAL when TAKE light is fully illuminated. It is strongly recommended that EEC System be placed in WARM mode prior to starting engines (pg. 4).</p>
<p>WHAT DO I DO WHEN I SEE THESE LIGHTS ON THE KEY-PAD?</p>  <p>IF TAKE AND TROLL LIGHTS ARE ON—control handles are not in neutral. Leave control system power switch on and move one control handle at a time to verify that the handles are in neutral position. When both handles are in neutral, system will automatically startup (TAKE light ON).</p>  <p>IF ALL 4 LIGHTS ON KEYPAD BLINK IN UNISON—EEC system is in Alarm Mode (see pg. 10). Restart EEC system by turning off EEC power switch and then turning back on.</p>		



CRUISE MODE

THIS IS THE OPERATING MODE THAT THE CONTROL SYSTEM WILL BE IN DURING NORMAL CRUISING OPERATIONS.

<p>1 TAKE light on at active station</p>  <p>ACTIVE STATION—During normal operation only Active Station will be in command. TAKE light stays on (fully illuminated) indicating that station is active and in command.</p>	<p>2 TAKE light blinks at inactive station</p>  <p>INACTIVE STATION— During normal operation all other stations are inactive. TAKE light will blink every 2 seconds indicating that control head is an inactive station.</p>	<p>3 All 4 lights blinking in unison</p>  <p>ALARM MODE—During normal operation, the EEC system continuously monitors parameters and will alert operator of alarm conditions (indicated by all 4 lights blinking in unison. See page 10 for more information.)</p>
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<p>THE LIGHTS ON THE KEYPAD ARE TO BRIGHT. HOW DO I DIM THE LIGHTS ON THE KEYPAD?</p>	 <p>Check battery indicator</p> <p>Check system indicator</p> <p>Press two middle buttons simultaneously to dim lights</p>	<p>To ACCESS THE LIGHT DIMMER FEATURE—Pressing the two middle buttons at the same time will “dim” the keypad lights. Pressing the two buttons a second time will return the keypad lights to normal brightness.</p> <p>NOTE: If you see the Check Battery or Check System lights illuminated, the system diagnostic check has detected a battery voltage problem or a problem within the engine control system. Refer to page 9 for more details.</p>
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CRUISE MODE

OTHER OPERATING MODES WHICH ARE AVAILABLE DURING NORMAL CRUISING OPERATION.

1

“BUMP” MODE CONTROL — During normal operation, small changes in engine speed (approx. 10-15 RPM) may be made by pressing and releasing the WARM or TROLL button.



To **INCREASE**
ENGINE SPEED
USING BUMP MODE,
PRESS AND
RELEASE **WARM**
BUTTON

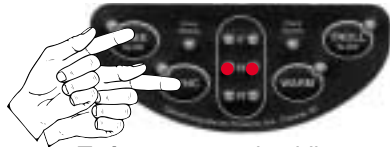
To **DECREASE**
ENGINE SPEED
USING BUMP MODE,
PRESS AND
RELEASE **TROLL**
BUTTON



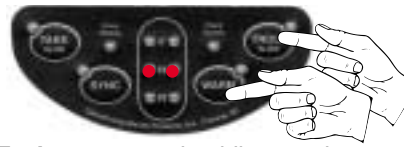
(NOTE: Engine speed can only be “bumped” when control handles are in gear and above idle speed. Amount of speed change per bump can be adjusted—see Operations Guide.)

2

HIGH IDLE MODE CONTROL — During normal operation, the boat operator is able to change the engine idle speed up to 10 different idle speed settings.



To **increase** engine idle speed,
press TAKE & SYNC
simultaneously



To **decrease** engine idle speed,
press WARM & TROLL
simultaneously



To **reset** engine idle speed to
lowest idle setting, press
TAKE and release

(NOTE: Idle speed can only be changed while control handles are in neutral. Idle speed change can be adjusted—see Operations Guide.)



WARM UP MODE

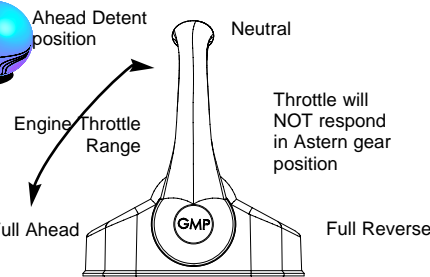
ALLOWS THE BOAT OPERATOR TO OPERATE THE ENGINE THROTTLE BY ITSELF, WHILE LOCKING THE TRANSMISSION IN NEUTRAL.



To engage, **PRESS AND RELEASE** WARM button one time (Control handles must be in neutral position to engage Warm Up Mode).



WARM LIGHT WILL BE ILLUMINATED WHEN EEC SYSTEM IS IN WARM MODE



ADVANCE CONTROL LEVER into and beyond Ahead detent position. The engine gear will remain in neutral while engine speed is increased (Engine will not respond if handle is moved into or beyond the Astern detent).



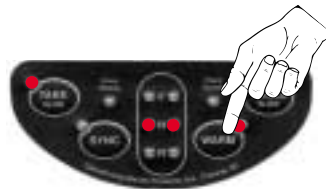
To disengage, bring handles back to neutral and **PRESS AND RELEASE** WARM button one time.



WARM LIGHT WILL GO OUT WHEN WARM MODE IS TURNED OFF—EEC SYSTEM IS NOW IN NORMAL CRUISE MODE.



CAUTION:
IMPORTANT SAFETY ALERT

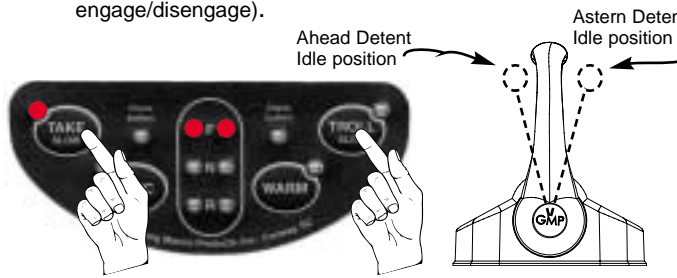
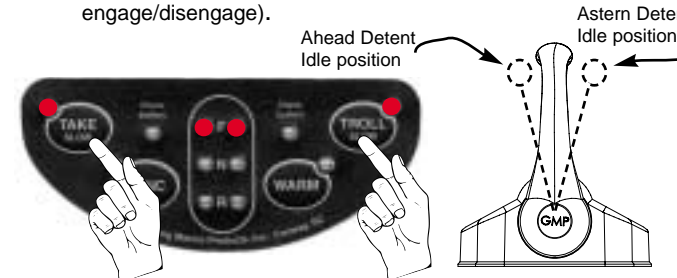



*IT IS **STRONGLY RECOMMENDED** THAT THE EEC SYSTEM BE IN WARM UP MODE AT ALL TIMES WHILE BOAT IS AT DOCK! THIS SAFETY PROCEDURE WILL PREVENT THE ACCIDENTAL ENGAGEMENT OF TRANSMISSION IF THE CONTROL HEAD HANDLES ARE INADVERTENTLY MOVED.*



SLOW MODE

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

<p>1 To engage, PRESS AND RELEASE TAKE and TROLL buttons in unison, one time (Control handles must be in neutral position or Ahead/Astern detents to engage/disengage).</p>  <p>TAKE AND TROLL/SLOW LIGHT WILL BLINK WHEN EEC SYSTEM IS IN SLOW MODE</p>	<p>2 To disengage, PRESS AND RELEASE TAKE and TROLL buttons in unison, one time (Control handles must be in neutral position or Ahead/Astern detents to engage/disengage).</p>  <p>SLOW LIGHT WILL GO OUT WHEN SLOW MODE IS TURNED OFF—EEC SYSTEM IS NOW IN NORMAL CRUISE MODE.</p>
<p>NOTES: A DIFFERENT KEYPAD IS USED ON BOATS THAT ARE NOT EQUIPPED WITH TROLLING VALVES.</p> <p>SLOW MODE IS ENGAGED BY PRESSING SLOW BUTTON ONE TIME. SLOW LIGHT WILL BE ILLUMINATED WHILE THE EEC-2001 SYSTEM IS IN THIS MODE.</p> 	



AUTOMATIC SYNCHRONIZATION

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

1 To engage, **PRESS AND RELEASE SYNC** button one time (Before the SYNC function can engage, both engines must be in the Ahead gear and handles must be approximately matched (within 10% of total travel).

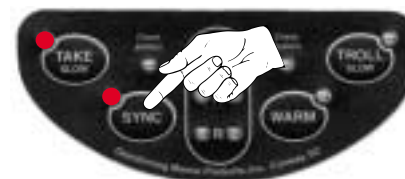


SYNC LIGHT WILL BE ILLUMINATED WHEN EEC SYSTEM IS IN SYNC MODE



When SYNC function is energized, EEC system will automatically control port engine speed to match starboard engine speed. If starboard engine speed is changed manually by the boat operator, port engine speed will automatically be changed to match

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



SYNC LIGHT WILL GO OUT WHEN SYNC MODE IS TURNED OFF—EEC SYSTEM IS NOW IN NORMAL CRUISE MODE.



- NOTES:**
- 1) Synchronization mode will be automatically disengaged if both control handles are moved to neutral position together.
 - 2) If starboard handle is moved to neutral gear position by itself, synchronization mode will be automatically de-energized. Port engine operation will continue to match starboard engine operation (gear and throttle) until port control handle is matched to starboard control handle position.



TROLL MODE

TROLL MODE ALLOWS THE BOAT OPERATOR TO CONTROL THE POSITION OF THE TRANSMISSION TROLLING VALVES.



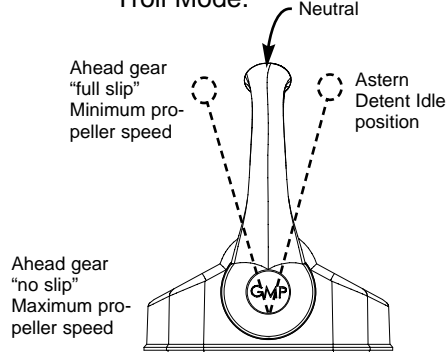
To engage, with handles in neutral, **PRESS AND RELEASE TROLL** button one time (Control Handles must be in Neutral to engage TROLL Mode).



TROLL LIGHT WILL BE ILLUMINATED WHEN EEC SYSTEM IS IN TROLL MODE



Control troll valve position by movement of control handle. Engine throttle speed is maintained at idle while system is in Troll Mode.



Ahead gear "no slip" Maximum propeller speed



To disengage, move control handles back to neutral and **PRESS AND RELEASE TROLL** button one time.



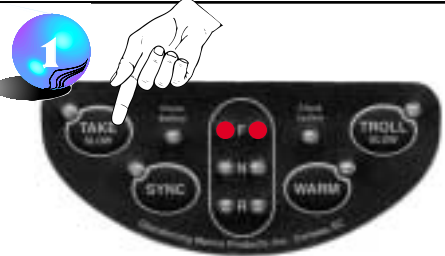
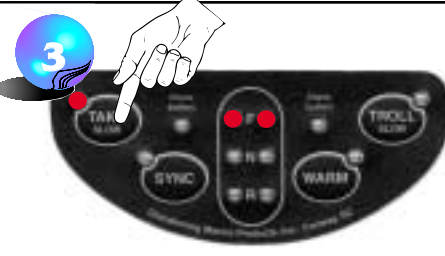









TROLL LIGHT WILL GO OUT WHEN TROLL MODE IS TURNED OFF—EEC SYSTEM IS NOW IN NORMAL CRUISE MODE.



- NOTES:** 1) BUMP mode (pg. 3) is available while troll valve is in operation to make small changes in troll valve modulation.
 2) Engine idle speed may be adjusted during troll valve operation (see Cruise Mode—pg. 3, for more information).


STATION TRANSFER PROCESS

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

 <p>1</p> <p>PRESS AND RELEASE TAKE button one time, at the helm station where you want to take control (TAKE light will begin to blink and control head beeper will begin to sound).</p>	<p>2</p> <p>At the station where you want to take control, MOVE THE CONTROL HANDLES to an appropriate throttle position.</p> <table border="1"> <thead> <tr> <th>Active Station Handle Position</th> <th>Station Taking Control Handle Position</th> </tr> </thead> <tbody> <tr> <td>In Neutral.</td> <td>In Neutral.</td> </tr> <tr> <td>In gear, at Idle.</td> <td>In same gear position, at Idle.</td> </tr> <tr> <td>In gear, above Idle.</td> <td>In same gear position, at same or lower speed setting.</td> </tr> </tbody> </table>	Active Station Handle Position	Station Taking Control Handle Position	In Neutral.	In Neutral.	In gear, at Idle.	In same gear position, at Idle.	In gear, above Idle.	In same gear position, at same or lower speed setting.	 <p>3</p> <p>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.</p>
Active Station Handle Position	Station Taking Control Handle Position									
In Neutral.	In Neutral.									
In gear, at Idle.	In same gear position, at Idle.									
In gear, above Idle.	In same gear position, at same or lower speed setting.									
<p>LIGHT SEQUENCE AT STATION TAKING CONTROL:</p> <table border="1"> <tr> <td data-bbox="285 922 789 1284">  <p>1) Prior to pressing button, light blinks 1 time every 2 seconds (Inactive station heartbeat).</p> <p>Light flashes 1 time / 2 seconds.</p> </td> <td data-bbox="789 922 1299 1284">  <p>2) After pressing button 1 time, TAKE light will blink—blink rate will depend on control handle setting at station taking control.</p> <p>Slow blink—handles not in appropriate position. Quick blink—handles in appropriate position.</p> </td> <td data-bbox="1299 922 1810 1284">  <p>3) Control transfer is complete after pressing TAKE button second time, while TAKE light is quick flashing.</p> <p>Solid TAKE light indicates transfer is complete. New station is now in control.</p> </td> </tr> </table>			 <p>1) Prior to pressing button, light blinks 1 time every 2 seconds (Inactive station heartbeat).</p> <p>Light flashes 1 time / 2 seconds.</p>	 <p>2) After pressing button 1 time, TAKE light will blink—blink rate will depend on control handle setting at station taking control.</p> <p>Slow blink—handles not in appropriate position. Quick blink—handles in appropriate position.</p>	 <p>3) Control transfer is complete after pressing TAKE button second time, while TAKE light is quick flashing.</p> <p>Solid TAKE light indicates transfer is complete. New station is now in control.</p>					
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WARNING MODE

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

<p><i>CHECK BATTERY light blinks</i></p>  <p>CHECK BATTERY INDICATOR will blink when battery voltage conditions exist that are questionable.</p>	<p>1 SYMPTOM</p> <ol style="list-style-type: none"> 1) SLOW BLINK—1 battery input is not detected by the system. 2) QUICK BLINK—high or low voltage from either one or both batteries. 	<p>2 ACTION</p> <ol style="list-style-type: none"> 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 page 10).
<p><i>CHECK SYSTEM light blinks</i></p>  <p>CHECK SYSTEM INDICATOR will blink when a possible problem has been detected within the system.</p>	<p>1 SYMPTOM</p> <ol style="list-style-type: none"> 1) Diagnostics tests have detected that part of the control system is not functioning normally. 	<p>2 ACTION</p> <ol style="list-style-type: none"> 1) Restart control system (turn OFF/ON). 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 Operations Guide).



ALARM MODE

DURING OPERATION THE EEC CONTINUOUSLY MONITORS SYSTEM FUNCTIONS AND WILL ALERT OPERATOR IF A SYSTEM PROBLEM IS DETECTED.



All 4 lights blink in unison



ALARM IS INDICATED when all 4 lights are blinking in unison on the control keypad.



When Alarm Mode is activated, control system will not continue to operate. In absence of control signal from EEC, transmission will normally go to neutral and engine throttle will normally go to idle.



RETURN THE MAIN STATION CONTROL HANDLES TO NEUTRAL and turn EEC power switch OFF. Restart the EEC system.



NOTES: 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.

Days (843) 399-6146

Evenings (843) 477-6630

The above number is a digital pager. Enter your phone # after you hear 3 beeps. Service personnel will return your call.

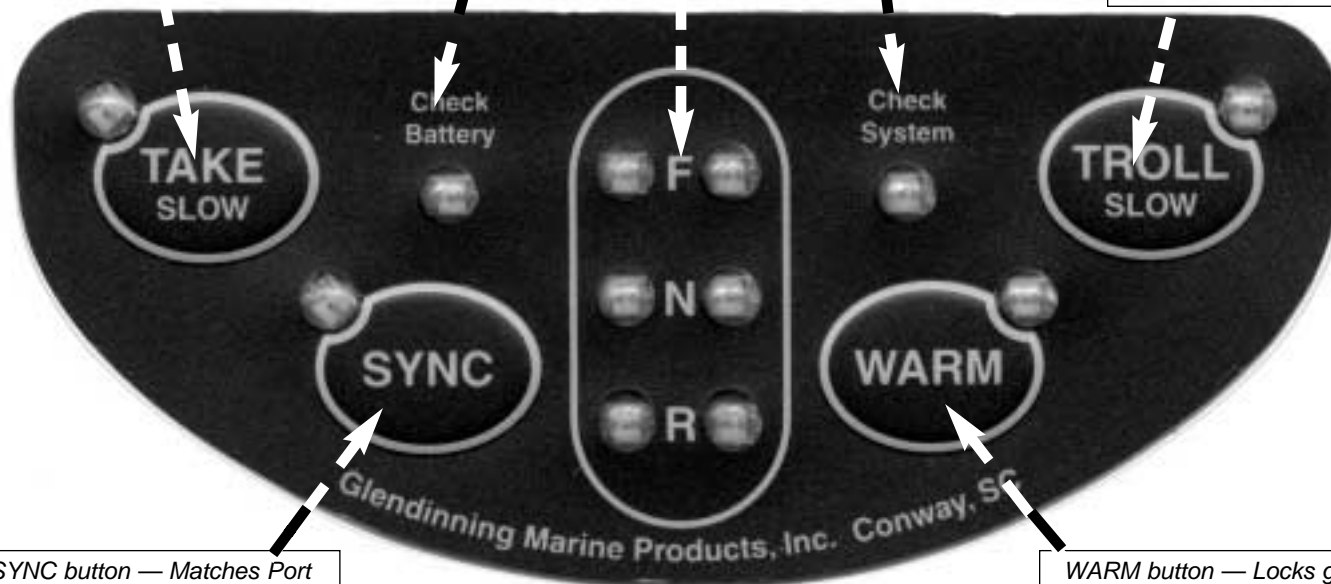
TAKE / SLOW button — used to transfer station control (pg. 8), and in conjunction with TROLL / SLOW button to change engine throttle response to approx. 1/2 of normal range (pg. 5)

Check Battery Indicator— low battery voltage (pg. 9)

Check System Indicator— system malfunction (pg. 9)

TROLL / SLOW button — controls trolling valves (pg. 7), and used in conjunction with TAKE / SLOW button to change engine throttle response to approx. 1/2 of normal range (pg. 5)

Gear Position Indicators



SYNC button — Matches Port engine speed to Starboard engine speed (pg. 6)

WARM button — Locks gear in neutral; throttle only (pg. 4)

All 4 button lights blinking in unison indicate an alarm — Alarm Mode (pg. 10)

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