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Teleflex Marine Products: 610-495-7011 • www.teleflexmorse.com
Dual-function single-lever controls:

Dual-function single-lever controls operate both shift and throttle with a single lever. The control mechanism still uses two cables (one for shift and one for throttle), but movement of both cables and control of shift and throttle is achieved through just one lever.

Dual-function, single-lever controls are also available for twin engine applications. Although there are two levers on the control, there is still only one lever controlling both shift and throttle for each individual engine.

Single lever control helped make boats so much easier to handle that it has become the most popular control used today. Not only do single-lever controls have a very natural instinctive action, but shifting is very quick and they can only be shifted at low RPM which protects the engine’s shift mechanism.

Single-function controls:

On single-function controls, one lever operates only the shift mechanism or only the throttle. The controls themselves may have one lever (which would control the shift or the throttle) or two levers (one for shift and one for throttle).

Twin engine applications will commonly utilize 2, two-lever single function controls. Both levers of one control will operate the throttles, while the levers of the second control will operate the shift mechanisms.
an introduction to engine controls

**Multiple station installations:**
Dual or multiple station applications almost exclusively use single-function two lever controls. **There are two basic system designs recommended for multiple stations:**

**Parallel Control System:** cables from each control station run all the way to the clutch and throttle at the engine. This configuration is sometimes used when cable runs are relatively short and direct.

**Series Control System:** cables run from controls at the upper station to the lower station controls. A second set of control cables runs from the lower station to the engine. This method is generally used for longer, more difficult cable runs.

When to utilize a parallel series system is dictated by the total degrees of bend in the cables as measured by the sum of the degrees of all bend radii. This directly affects the efficiency of cable action. The configuration that gives the control system the fewest degrees of bend is the one that should be employed.

**Control head mounting:**
A final choice in engine control styles is the type of mounting. Teleflex Marine offers controls for most applications and user preferences.

**Mechanical Advantage:**
Every control has its own “mechanical advantage” factor. Mechanical advantage means that because you are using a lever to create motion at the other end of a control system (move the throttle or shift mechanism on the engine itself) it requires less effort at the control handle than if you were pushing directly on the engine’s throttle or shift mechanism. **Example:** if an engine required 15 pounds of force to move its shift lever and you use a control with a mechanical advantage of 2.77, you would divide the force by the mechanical advantage to determine how much effort must be exerted at the control lever handle to create the needed 15 pounds of force.

\[
\text{force} = \text{mechanical advantage} \times \text{force required at control lever}^* \\
\text{force} = \left(\frac{15 \text{ lbs}}{2.77}\right) = 5.42 \text{ pounds of force required at control lever}^* \\
\]

*Approximate: varies by cable efficiency and routing.*

Understanding a control’s mechanical advantage and the amount of force to be overcome at the engine is very important when specifying the appropriate control.
When making a control system selection, please note that the **type of engine, number of engines** and **number of helm stations** determine which **control** or range of controls can be used:

Single engine/single station boats can use most of our controls when used with universal 3300/33 type control cables. **Outboards and stern drives** should use controls which offer the neutral safety switch and lock-out features.

**Which Control is Right for You?**

<table>
<thead>
<tr>
<th>BOAT TYPE:</th>
<th>CH1700</th>
<th>CH7500/7600</th>
<th>SL-3</th>
<th>SL-3</th>
<th>CH2600</th>
<th>CH2700</th>
<th>CH2100</th>
<th>MT-3</th>
<th>CH2200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outboard &amp; Sterndrive single station</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
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<tr>
<td>Outboard &amp; Sterndrive dual station</td>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
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<tr>
<td>Inboard dual station</td>
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<td>Jet Boat</td>
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<tr>
<td>Sailboat</td>
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<td>CHY</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
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</tbody>
</table>

**CONTROL FEATURES:**

| Neutral safety switch to prevent starting in gear | Y | Y | Y | Y | Y | O | O | Y | O |
| Neutral interlock to prevent accidental shifting | Y | Y | Y | N | Y | Y | N | Y |
| Engine warm-up provision | Y | Y | Y | Y | Y | Y | Y | Y |
| Adjustable throttle brake | Y | Y | Y | Y | N | N | N | N |
| Trim & tilt switch | Y | Y | O | O | Y | CHY | N | N | N |
| Forward neutral reverse detents | Y | Y | Y | Y | Y | Y | Y | Y |
| Adjustable travel stops | N | N | N | N | N | N | N | N |
| Applicable for multiple stations (amount) | N | N | N | N | N | N | N | N |
| Trolling Valve/Thruster/Windlass control | N | N | N | N | N | N | N | N |
| Maximum Number of Engines | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 1 |

**CONTROL CABLES USED:**

| 33C/3300 Universal Types | Y | Y | Y | Y | Y | Y | Y | Y |
| Mercury/Mariner OEM Types | Y | Y | Y | Y | N | N | N | N |
| OMC & OMC/Volvo OEM Types | Y | Y | Y | Y | N | N | N | N |
| 43 Series Cables | N | N | N | N | N | N | O | N |
| 64 Series Cables | N | N | N | N | N | N | N | N |
| Merc Gen II Cables | Y | Y | Y | Y | N | N | N | N |
selecting an engine control system

**Sailboats** can use either side mounts or top mounts as space permits. Specially controls are offered for **bass**, **ski**, and **jet boats**, each suited to the characteristics of those boats.

**Control cable routing paths** should be chosen to minimize bends, kinks and obstructions. Cable routing with a few gradual bends will result in better feel at the control. After installation, all boats should be water tested to ensure safe, dependable operation.

**Key to Notes:**

- Y Yes
- O Optional
- N No

1. Sailboat with outboards.
2. Sailboat with inboard hydraulic transmission.
3. Sailboat with inboard cone clutch.
4. Optional neutral safety switch recommended when used with outboards.

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<table>
<thead>
<tr>
<th>Control</th>
<th>CH2300</th>
<th>MV-3</th>
<th>S and SR</th>
<th>CH5600</th>
<th>CH4400</th>
<th>MY</th>
<th>ST/KE4</th>
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<tr>
<td>Jet Boat</td>
<td>Side Mount</td>
<td>Ski/Jet Side Mount</td>
<td>Twin S Top Mount</td>
<td>Twin Top Mount</td>
<td>Flush Top Mount</td>
<td>Flush Top Mount</td>
<td>Stand-alone Controls</td>
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**NOTE:** This chart is intended as a guide with general recommendations. If you have questions about a control application, please contact Teleflex Marine at 610-495-7011 or www.teleflexmorse.com

<table>
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<th>Y (waterproof)</th>
<th>Y</th>
<th>O</th>
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<td>N</td>
<td>N</td>
<td>N</td>
<td>Y (roll valve)</td>
</tr>
</tbody>
</table>

| 1 | 1 | 1 | 1 | 1 | 3 | 1 | 2 |
A Step Beyond the Ordinary:
The CH5600 SLT from Teleflex is a step beyond ordinary engine controls. This stylish and unique top-mount control eliminates throttle creep, yet works flawlessly even in twin station applications.

Stops Throttle Creep Without Sacrificing Smooth Feel:
Better than traditional friction-based solutions, the CH5600 doesn't rely on tightening the control lever or restricting cable movement to stop creep. (Friction-based methods make the cable “stiffer” and more difficult to move.) Using a patented Self-Locking Throttle (SLT) clutch, the CH5600 control holds throttle lever position, even in vibration-prone environments.

Experience the Full Effect of Premium Control Cables:
Because the control maintains the position of the throttle lever (instead of the traditional method of putting a drag on the control cable) the throttle lever stays where you set it and it’s easy to move the lever when you’re ready.

With the CH5600, you can take full advantage of premium, high-efficiency cables for smooth lever operation, because cable movement is unrestricted. Yet, the CH5600’s patented SLT clutch will not allow vibration and cable feedback to move the lever.

Other controls allow the use of premium cables, but the advantage of those high performance cables is negated when a “cable brake” is used to limit throttle creep. There is no “positive stop” with a cable brake. You tighten it to achieve a trade-off between lever slippage and ease of movement. If it’s too tight, the cable becomes difficult to move. If it’s too loose, the cable may feel fine but the lever may creep.

Each lever of the CH5600 control has both an SLT and direct-drive cable attachment for single or dual station operation without sacrificing cable efficiency or smoothness.
cutting edge control technology for nearly any boat

Telexflex

premium engine control

Unmatched Features and Convenience:

This family of controls was created with a painstaking focus on ergonomics in every detail. *The result is an engine control which is rugged and substantial, yet feels natural in every function.*

A Family of Controls — One for Nearly Any Boat:

These controls are ideal for most single-station outboards, stern drives and inboards. Available models include a side mount (with or without lanyard-type emergency cutoff switch) and single lever top mount.

True “Easy On” Cable Attachment:

*These controls readily accept OEM type cables* for Mercury, Mariner, Force, OMC, and OMC/Volvo engines AND *universal 33C types* used on most other engines. Installation is fast and simple. No modifications to the control or tedious cable adjustments are needed! 
Teleflex CH1700/7500 control

(dual-function control — each lever controls throttle AND shift)

This family of controls was created with a painstaking focus on ergonomics in every detail. The result is an engine control which is rugged and substantial, yet feels natural in every function.

Applications:
For single station use with nearly any engine.

Features:

- Single-lever top mount PLUS sidemount with and without cut-off switch.
- Precise, smooth, positive action.
- Ergonomically designed handle with Soft Touch Grip and intuitive positioning of shift interlock, trim switch and other features.
- New trim switch with tactile feedback.
- Available in chrome or black finish.
- Push button for neutral engine warm-up.
- Trim switch in grip for one-hand operation.
- Power tilt when needed for trailering.
- Neutral interlock and start-in-gear protection switch.
- Optional, lanyard-style cut-off switch for emergency engine shutdown (CH1700)*.
- Drag adjustment included in all models.
- “Easy-On” cable design accepts virtually every type of OEM and 3300 type cable.
- Easily adapted to push or pull cable actuation mode without tools.
- Deutsch® electrical connections standard.
- Mechanical advantage 2.38:1
- Meets/exceeds all applicable standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing Mercury/Mariner® and OMC® OEM type control cables as well as universal 33 type cables and engine connection kits.

*Cut-off switches normally function as follows (without lanyard installed on switch): Inboard and Stern Drive - switch open; Outboard - switch closed. Cut-off switch is not available with top mount controls.

OEM Types

OEM/Univ. 3300 Types

Universal 3300 Types

DIMENSIONS: page 214
CONTROL TYPES: page 174
SELECTION GUIDE: page 176
SUPPORT: www.teleflexmorse.com
or call 610-495-7011

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing Mercury/Mariner® and OMC® OEM type control cables as well as universal 33 type cables and engine connection kits.
**Engine Controls:**

**CH1700 SIDE MOUNT LEFT LEVER:**
Black (standard) ................. CH1702-000000
Black (trim, harness) .......... CH1702-000011
Black (trim, harness,
outboard cutoff switch) ........ CH1702-001011
Black (trim, harness,
sterne drive cutoff switch) .... CH1702-002011
Black (trim, tilt, harness) .... CH1702-010012
Black (trim, tilt, harness,
outboard cutoff switch) ....... CH1702-011012
Black (trim, tilt, harness,
sterne drive cutoff switch) .... CH1702-012012
Chrome Handle
(trim, harness) ................. CH1702-200011
Chrome Handle
(trim, tilt, harness) .......... CH1702-210012

**CH7500 TOP MOUNT SINGLE LEVER:**
Black & Chrome ..................... CH7502-000000
Black & Chrome
(trim, harness) ................. CH7502-000011
Black & Chrome
(trim, tilt, harness) .......... CH7502-010012
Chrome (trim, harness) ....... CH7502-200001
Chrome (trim, tilt, harness) .... CH7502-210012

**Options:**
Standard Tilt/Trim Harness .......... 7210115
Yamaha Tilt/Trim Harness .......... 7210113
Honda Tilt/Trim Harness .......... 7210116
Mercury Tilt/Trim Harness .......... 7210117

**Service Items:**
Handle with Trim-CH1700-Black .... 7212917
Handle W/O Trim-CH1700-Black .... 7212710
Handle with Trim-CH1700-Chrome .... 7212813
Handle W/O Trim-CH1700-Chrome ... 7212616
Handle with Trim-CH7500-Black .... 7213619
Handle W/O Trim-CH7500-Black .... 7213411
Handle with Trim-CH7500-Chrome .... 7213515
Handle W/O Trim-CH7500-Chrome ... 7213318

**Service Items, continued:**
Cover-CH7500-Black ............... 7214217
Cover-CH7500-Chrome .............. 7214113
Insert Kit CH1700-Black .......... 7213111
Insert Kit CH7500-with Tilt-Black .... 7214611
Insert Kit CH7500-W/O Tilt-Black .... 7214518
Insert Kit CH1700-Chrome .......... 7210317
Insert Kit CH7500-with Tilt-Chrome .... 7214414
Insert Kit CH7500 W/O Tilt-Chrome .... 7214311
Insert Kit CH1700-Black .......... 7213214
Neutral Throttle Warm-up Kit-CH7500 7214715
Cable Nest And Connection Kit .... 212151-001
(Mounts 3300 and all popular OEM type cables to control.)

**Compatible Cables:**
Merc CC179/CC635, CC189/CC679, CC210, CC213, CC630
OMC/Volvo CC205/CC636, CC214/CC740
3300 Universal Cables (10-32 threaded ends)
*Purchase of cable connection kit(s) may be required to complete control system installation.*
Morse SL-3 control

 dülfunCtlcn

(accepts these cables:)

OEM Types

OEM/Univ. 3300 Types

Universal 3300 Types

Applications:

A perfect match with nearly any engine: outboards, inboards or sterndrives: Evinrude, Johnson, Honda, Mariner, Mercruiser, Mercury, Nissan, OMC Cobra, Suzuki Tohatsu, U.S. Marine/Force, Volvo, Yamaha and others.

Features:

- Four styles: single and twin lever topmounts + sidemount with and without cut-off switch.
- Firm yet effortless shift and throttle motion.
- Entire gear mechanism is enclosed and permanently lubricated for long-lasting, smooth operation.
- Port or starboard installation with various cable entry angles.
- Easily adapted to push or pull cable actuation mode without tools.
- “Easy-On” cable design means no shift or throttle adjustments, no control modifications, and accepts virtually every type of cable.
- Push button for neutral engine warm-up.
- Trim switch in handle grip for one-hand operation.
- Neutral interlock prevents starting in gear.
- Adjustable brake prevents throttle creep.
- Mechanical advantage 2.38:1.
- Meets/exceeds all applicable standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing Mercury/Mariner® and OMC® OEM type control cables as well as universal 33 type cables and engine connection kits.
Engine Controls:

SL-3 TOP MOUNT SINGLE LEVER:
Top Mount Single Standard .................. 309476
Top Mount Single Deluxe (trim) .......... 309477
Top Mount Single Deluxe (trim & tilt - Volvo) .................. 309478-001
Top Mount Sgl. Deluxe (trim & tilt) ........ 309478-002

SL-3 TOP MOUNT TWIN LEVER:
Top Mount Twin Standard .................. 309479
Top Mount Twin Deluxe (trim) .............. 309480
Top Mount Twin Deluxe (trim & tilt) ...... 309481

SL-3 SIDE MOUNT
Side Mount Standard .......................... 309473
Side Mount Deluxe (trim) ................. 309474
Side Mount Deluxe (trim & tilt - Volvo) .... 309475-001
Side Mount Deluxe (trim & tilt) .......... 309475-002

SL-3 SIDE MOUNT W/CUT-OFF SWITCH (OUTBOARD):
Side Mount Std. (cutoff switch) .... 311322-002
Side Mount Deluxe (cutoff & trim) .... 311323-002
Side Mount Deluxe (cutoff, trim & tilt) (5 wire - Volvo) ............... 311324-002
Side Mount Deluxe (cutoff, trim & tilt) (4 wire - non-Volvo) ........... 311325-002

SL-3 SIDE MOUNT W/CUT-OFF SWITCH (I/O AND INBOARD):
Side Mount Std. (cutoff switch) .... 311322-001
Side Mount Deluxe (cutoff & trim) .... 311323-001
Side Mount Deluxe (cutoff, trim & tilt) (5 wire - Volvo) ............... 311324-001
Side Mount Deluxe (cutoff, trim & tilt) (4 wire - non-Volvo) ........... 311325-001

Options/Service Items:
Trim & Tilt Switch Kit ....................... 315590
Side Mount Tilt Switch/wire harness .... 309509
Top Mount Tilt Switch/wire harness ...... 309514
Lanyard Cut-off Switch (side mount) ..... 311376
Cut-off Switch with Cover .............. 311380-001
Cut-off Switch Only ....................... 311379-001
Neutral Safety Switch ..................... 051801-033
Top Mount (Single) replace. parts kit .... 316941
Top Mount (Twin) replace. parts kit ...... 316942

Options/Service Items, continued:
Side Mount replacement parts kit .......... 317002
Side Mount replacement parts kit (with cutoff switch) ............ 317003
Cable Nest Kit (mounts all cables to controls) ...... 212151-001

Compatible Cables:
Merc CC179/CC635, CC189/CC679, CC210, CC213, CC630
OMC/Volvo CC205/CC636, CC214/CC740
3300 Universal Cables (10-32 threaded ends)
Purchase of cable connection kit(s) may be required to complete control system installation.
Teleflex CH2600/2700 controls

(dual-function control — each lever controls throttle AND shift)

Universal Outboard Side Mount Control.
This economical single lever, dual action control features universal styling, positive shift detents, an optional engine trim switch in the handle and easy installation. It’s an excellent replacement for both outboard and stern drive controls using universal (3300/33 type) cables.

(accepts these cables:)

OEM/Univ. 3300 Types

Universal 3300 Types

Applications:

Virtually all single-station outboards and stern drives with mechanical transmissions. 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 engine trim switch in handle.
- Optional neutral safety switch.
- Weatherproof exterior, rugged die cast frame.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)
mechanical control, most engines, single stations

**Engine Control:**

Side Mount with Trim Switch .......... CH2700P
Side Mount (no Trim Switch) .......... CH2600P

**Options/Service Items:**

Optional Neutral Safety Switch ...... CA27090P
Connection Kits . (see Connection Kits section)

**Compatible Cables:**

**OEM/Univ. 3300 Types**

Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable .......... CC213XX

**Universal 3300 Types**

3300 cable (standard) .................... CC172XX
3300 cable (midrange) ................... CC330XX
33C cable (midrange) ................. 032377-003-XX
33C Supreme (midrange) .............. 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

(May require purchase of cable connection kit(s) to complete control system installation.)
Teleflex CH2100 control

(dual-function control — each lever controls throttle AND shift)

On more sailboats than any other, this side mount control from Teleflex features single lever/dual action design. Its compact construction accommodates sailboats and other boats without a lot of space for a control. And, it’s a drop-in replacement for controls sold by NW®, Onan®, TX®, Vetus®, Volvo® and others. Uses 3300 type cables.

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 33 type cables.
- Positive shift detents and neutral lock-out.
- Optional neutral safety switch.
- Weatherproof exterior, rugged diecast frame.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)
mechanical control, most engines, single stations

**Engine Control:**

Side Mount Sailboat Control ............. CH2100P

**Options/Service Items:**

Optional Neutral Safety Switch ....... CA27090P
Connection Kits. *(see Connection Kits section)*

**Compatible Cables:**

**OEM/Univ. 3300 Types**

Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable ............ CC213XX

**Universal 3300 Types**

3300 cable (standard) ..................... CC172XX
3300 cable (midrange) .................. CC330XX
33C cable (midrange) ................. 032377-003-XX
33C Supreme (midrange) .......... 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

*(May require purchase of cable connection kit(s) to complete control system installation.)*
Morse MT-3 control

(dual-function control — each lever controls throttle AND shift)

Ideal for inboards, stern drives and outboards, MT-3 combines classic binacle control styling with dual function levers, a neutral safety switch and an engine warm-up feature! Control throttle and shift with one lever instead of two. One twin-lever unit can control twin engines.

Applications:
Great for single station inboards stern drives and outboards, single or dual engine. Perfect for applications in which a binacle control appearance is desired, but one-lever throttle/shift control is preferred. Also a great choice when space is at a premium.

This control uses 33 type cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:
- Binnacle styling with the advanced features of a dual-function control: one-handle engine control, neutral warm-up.
- Neutral safety switch to help prevent starting in gear.
- Built-in friction drag helps prevent slippage and throttle creep while underway.
- Meets/exceeds all applicable industry standards.

Start and warm-up are done by pulling out the hand levers in the neutral position. This disengages the clutch and allows throttle to be advanced in neutral. Returning to neutral detent re-engages clutch.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 and 43 type 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.) 43 type cables cannot be used on MT-3 Twin, as interference will occur.

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(accepts these cables:)

OEM/Univ. 3300 Types

Universal 3300 Types

Universal 43 Types*

(*MT-3 single lever only)
mechanical control, most engines, single stations

**Engine Control:**

**SINGLE LEVER:**
MT-3 Single ............................................ 308601

**SINGLE LEVER:**
MT-3 Twin ............................................ 308602

**Options/Service Items:**
Optional Neutral Safety Switch ..... 051801-023

Hand Lever .............................................. 032778-002
Chrome Side Plate, MT-3 .................. 308598-001
Ball Knob, Red .................................. 4009912
Decal, FWD-NEU-REV .......................... 038853

Hardware Kit for MT-3 single lever ...... 308599
Hardware Kit for MT-3 twin lever ........... 308727

OMC Replacement Switch for Sterndrive (available for MT-2 only) ............... 301585

Connection Kits . (see Connection Kits section)

**Compatible Cables:**

**OEM/Univ. 3300 Types**
Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable ........ CC213XX

**Universal 3300 Types**
3300 cable (standard) .................. CC172XX
3300 cable (midrange) ............... CC330XX
33C cable (midrange) ................. 032377-003-XX
33C Supreme (midrange) .......... 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

**Universal 43 Types**
TFXTREME 4300 BC cable ............. CC692XX
TFXTREME 4300 CC cable ............. CC693XX

43 type cables cannot to be used on MT-3 Twin, as interference will occur.

(May require purchase of cable connection kit(s) to complete control system installation.)
Teleflex CH2200/2300 controls

(dual-function control — each lever controls throttle AND shift)

Considered the best by boat builders, these controls feature superior styling, a compact design, positive lockout and smoothest feel available — and they’re standard equipment on ski and jet boats. The ski boat unit includes superior neutral warm-up action, while the jet boat version features a waterproof start-in-gear switch.

Features:

- Single lever, dual action for throttle & shift.
- Superior neutral engine warm-up control (ski version).
- Flush mount design for quick, tidy installation.
- Includes hardware for two 33 type cables.
- Crisp shifting ball grip for a solid, sure feel.
- Neutral safety switches:
  - Optional for ski version;
  - Waterproof type included with jet version.
- Weatherproof exterior, rugged diecast frame.
- Meets/exceeds all applicable industry standards.

Applications:

Ski version: all inboard ski boats and other single station craft requiring super-smooth, precise throttle control.

Jet version: all jet boats powered by Mercury® Sport Jet 90 & early 120, OMC® Turbo Jet, or similar propulsion systems.

Single lever, dual action design controls throttle and shift with one lever using 33 type cables. See components list for cables used.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.) Not for Berkeley, Sport Jet 175 or other applications using 43 type cables. For those applications, see the MV-3 control pages, after these.

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SUPPORT: www.teleflexmorse.com or call 610-495-7011

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.) Not for Berkeley, Sport Jet 175 or other applications using 43 type cables. For those applications, see the MV-3 control pages, after these.
mechanical control, most ski boat and jet applications

**Engine Control:**

**SKI BOAT CONTROL:**
Side Mount Ski Boat Control .............. CH2200P

**JET BOAT CONTROL:**
Side Mount Jet Boat Control ............. CH2300P

**Options/Service Items:**

**CH2200 SKI**
Optional Neutral Safety Switch (Ski) CA27090P

**CH2300 JET**
Neutral Safety Switch (Jet) .............. CA27100P

**CH2200 OR CH2300:**
Stainless Steel Knob (red-grooved) CA69052P
Stainless Steel Knob (smooth) ....... CA69051P
Cable Connection Kits .... (See Connection Kits and Jet Boat Steering sections.)

**NOTE:** Correct Craft® installations of the CH2200 control use a proprietary mounting arrangement. Please contact Correct Craft when servicing this control.

**Compatible Cables:**

**OEM/Univ. 3300 Types**
Mercury 3600 type cable (premium) . CC630XX

**Universal 3300 Types**
3300 cable (standard) ................. CC172XX
3300 cable (midrange) .................... CC330XX
33C cable (midrange) ........... 032377-003-XX
33C Supreme (midrange) ..... 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

**Jet Gate Control Cables:**
Sport Jet 90 & early 120 ............... CC213XX
(This is a special 3300 type cable with different configuration at drive end for 90 and early 120's.)

(May require purchase of cable connection kit(s) to complete control system installation.)

Please note that while the CH2200 and CH2300 are similar in appearance, they have different neutral safety switches and internal mechanisms. Do not substitute CH2200 for CH2300 or vice-versa. If you need assistance with these products, please contact Teleflex Marine Tech Service at 610-495-7011 or on-line at www.teleflexmorse.com
Morse MV-3 control

(dual-function control — each lever controls throttle AND shift)

The MV-3 offers style and incredible versatility in a dual-function, single-lever control. Several models are offered for outboards, stern drives, inboards, ski boats and jets, including versions with a lanyard-type emergency cut-off switch.

Applications:

Ideal for many outboards, stern drives and inboards, with specialized versions for ski and jet boats. Single lever, dual action units control throttle and shift with one lever, using 33 or 43 type control cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Specially styled for today’s integrated cockpit.
- Fits all popular outboards, inboards and sterndrives.
- Emergency cut-off feature available for most popular MV-3 models.
- Crisp, positive detents.
- Pullout clutch disengagement feature for engine warm-up with automatic disengagement.
- Neutral interlock feature to prevent accidental shifting.
- Mechanical advantage - Shift 2.9:1 / Throttle 3.20:1.
- Uses 33 and 43 type cables.
- Can be used for Berkeley Jet (with 43 type cables) and Mercury 175 HP Sport Jet (with special cable noted on next page).
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)

OEM/Univ. 3300 Types

Universal 3300 Types

Universal 43 Types

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NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)
Engine Controls:

MV-3 Competition Ski Boat Version (no safety switch) forward cable entry .. 311335
MV-3 Standard Control with neutral safety switch and aft cable entry .......... 311364
MV-3 Standard Control with neutral switch and throttle limit .......... 311481
MV-3 Standard Control with neutral switch ......................................... 311480

MV-3 FOR JET BOATS:
MV-3 Control, right mount, Berkeley ..... 311412
MV-3 Control, left mount, Berkeley ...... 311413
MV-3 Control, Mercury Sport Jet 90, right mount with special immersible switch, aft cable entry .................. 311415
MV-3 Control, Mercury Sport Jet 90, right mount with special immersible switch, forward cable entry .............. 311414
MV-3 HD Control with neutral safety switch and aft 175 HP only .......... 311508

MV-3 WITH EMERGENCY CUT-OFF SWITCH (JETS & OUTBOARDS):
MV-3 Competition Ski Boat Type .. 311335-002
MV-3 Mercury Sport Jet 90, right mount w/special immersible switch, forward cable entry ............. 311414-002
MV-3 Mercury Sport Jet 90, right mount w/special immersible switch, aft cable entry .................. 311415-002
MV-3 for Jet Boats .......................... 311364-002
MV-3 HD Mercury Jet 175 HP Only, right mount w/special immersible switch, aft cable entry .................. 311508-002

MV-3 WITH EMERGENCY CUT-OFF SWITCH (STERN DRIVES & INBOARDS):
MV-3 Competition Ski Boat Version ....................... 311335-001

Options/Service Items:
Ball Knob, Black ............................................. 4009819
MV-2 Hand Lever Assembly ........................................ 306494
Neutral Safety Switch Replacement ........... 300928
OMC Replacement Shift Switch Only ... 301585
Immersible Neutral Safety Switch for Jet ............... 051801-031

Options/Service Items, continued:
MV-3 Emergency Cut-Off Switch Kit for Jet and Outboard .................... 311482-002
MV-3 Emergency Cut-Off Switch Kit for I/O and Inboard ....................... 311482-001
Cable Connection Kits .. (See Connection Kits and Jet Boat Steering sections.)

Compatible Cables:

OEM/Univ. 3300 Types
Mercury 3600 type cable (premium) .. CC630XX

Universal 3300 Types
3300 cable (standard) ......................... CC172XX
3300 cable (midrange) ......................... CC330XX
33C cable (midrange) ......................... 032377-003-XX
33C Supreme (midrange) .................. 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

Jet Gate Control Cables:
Sport Jet 90 & early 120 ................. CC213XX
Sport Jet 175 ................................. 312240-000-XXX
(May require purchase of cable connection kit(s) to complete control system installation.)
Morse S control

(single-function control — each lever controls throttle OR shift)

The original, classic Morse control – great for inboards, single or dual station. The time-proven design of Twin S means years of reliable operation. Accepts universal control cables. Optional lever extension, detent kits and neutral safety switch available. Additional hardware may be required for twin station use.

(accepts these cables:)

- OEM/Univ. 3300 Types
- Universal 3300 Types
- Universal 43 Types

Applications:

Ideal for inboards, stern drives and outboards, the S controls are suitable for single or dual station use. These single function engine controls are available in both one or two-lever models.

Both S controls use 33 and 43 type cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Highly polished corrosion resistant chrome plated brass covers.
- Simple, rugged, compact design.
- Optional neutral safety switch to prevent starting in gear.
- Optional hand lever extension.
- Optional shift detent kit (if used in dual stations; use on main station only).
- Uses 33 and 43 type cables.
- Mechanical advantage - shift 2.77:1/throttle 2.77:1.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 and 43 type 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.)
mechanical control, most engines, single & dual stations

**Engine Controls:**

Single S ......................................... 031002-001
Twin S ............................................ 031001-001

**Options/Service Items:**

Clutch Detent Kit ........................................... 022328
In-Series Dual Station Kit, 30 Series
(2 required for twin) ................................. 039489-002
In-Series Dual Station Kit,
40 Series (2 required for twin) ................. 042152
Neutral Safety Switch Kit .............................. 047307
OMC Replacement Shift Switch Only ... 301585
Lever Extension ........................................... 036773
Throttle Hold Kit (one per lever,
prevents throttle creep) ........................... 306997
Ball Knob, Red ........................................... 4009912
Ball Knob, Black ....................................... 4009819
Stainless Steel Throttle Knob
(grooved) ........................................... CA69052P**
Stainless Steel Shift Knob
(smooth) ........................................... CA69051P**
** Fits most controls with 3/8-24 threaded levers.
Mounting Hardware Kit, Twin ................. 061001
Connection Kits . (see Connection Kits section)

**Compatible Cables:**

**OEM/Univ. 3300 Types**

Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable ................. CC213XX

**Universal 3300 Types**

3300 cable (standard) ......................... CC172XX
3300 cable (midrange) ....................... CC330XX
33C cable (midrange) ....................... 032377-003-XX
33C Supreme (midrange) ............. 031947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

**Universal 43 Types**

TFXTREME 4300 BC cable ................. CC692XX
TFXTREME 4300 CC cable ................. CC693XX

(May require purchase of cable connection kit(s) to complete
control system installation.)
Morse SR control

(single-function control — each lever controls throttle OR shift)

Ideal for inboards and multiple station boats, SR Twin is rugged and made with the finest marine grade materials. Removable cover enables easy access to the mechanism. Includes adjustable brakes and stops. Accepts universal control cables. Optional detent kits and neutral safety switch available. Additional hardware may be required for twin station use.

Applications:

Ideal for inboards, stern drives and outboards, Twin SR controls are suitable for single or dual stations and can utilize 33 or 43 type cables.

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

Features:

- Polished stainless steel cover, marine grade chrome levers and rugged cast hanger plate.
- Removable cover enables easy access to the control mechanism.
- Adjustable brakes and stops.
- Optional neutral safety switch to prevent starting in gear.
- Optional shift detent kit (if used in dual stations; use on main station only).
- Uses 33 and 43 type cables.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 and 43 type 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.)

OEM/Univ. 3300 Types

Universal 3300 Types

Universal 43 Types

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mechanical control, most engines, single & dual stations

**Engine Control:**

Twin SR 2-lever control ................. 036469-001

**Options/Service Items:**

Clutch Detent Kit ........................................... 036774
In-Series Dual Station Kit, 30 Series
(2 required for twin lever control) .. 039490-002
HD Conversion Kit
(2 required for twin lever control) ........... 040090
In-Series Dual Station Kit,
40 Series (2 required for twin) ........... 048501-002
Neutral Safety Switch Kit ....................... 041117
OMC Replacement Shift Switch Only ... 301585
Hand Lever .................................................. 036326
Ball Knob, Red........................................ 4009912
Ball Knob, Black .................................... 4009819
Stainless Steel Throttle Knob
(grooved) .......................... CA69052P**
Stainless Steel Shift Knob
(smooth) ................................. CA69051P**
** Fits most controls with 3/8-24 threaded levers.
Replacement Stainless Steel Lever CA69060P
(Fits Teleflex® CH5600 SLT and Morse® Twin SR controls only.)
Mounting Hardware Kit, Twin ............... 060991
Replacement Dome Cover, Twin ............ 047682
Connection Kits  . (see Connection Kits section)

**Compatible Cables:**

**OEM/Univ. 3300 Types**
Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable ........... CC213XX

**Universal 3300 Types**
3300 cable (standard) .................. CC172XX
3300 cable (midrange) ................. CC330XX
33C cable (midrange) .............. 032377-003-XX
33C Supreme (midrange) ...... 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

**Universal 43 Types**
TFXTREME 4300 BC cable .......... CC692XX
TFXTREME 4300 CC cable .......... CC693XX

(May require purchase of cable connection kit(s) to complete control system installation.)
Teleflex CH5600 SLT control

(single-function control — each lever controls throttle OR shift)

There's nothing else like it! Patented Self Locking Throttle technology makes the SLT the only control that stops cable creep and works flawlessly in single or multi-station applications (even in the most complex cable routing). It stops unwanted control cable movement without cable brakes or other makeshift solutions that cause poor feel at the lever. Additional hardware may be required for twin station use.

Applications:

For single or dual stations with single or twin engines (including outboards utilizing an optional neutral safety switch kit).

Uses 3300 type universal control cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Patented SLT technology prevents throttle creep. Lever stays where it is placed.
- Superior twin station performance.
- Polished Stainless Steel levers & dome.*
- Positive detent for shifts.
- Can be user-configured as either Push or Pull to operate throttle and/or shift.
- Includes hardware for two 33 type universal control cables.
- Easy-access adjustable detents/stops (under easily removable dome).
- Optional neutral safety switch.
- Meets/exceeds all applicable industry standards.

Drop-in replacement for Morse® Twin SR controls.

*standard on CH5600P version

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.) More information about this product can be found in the Technical Reference section.
mechanical control, most engines, single & dual stations

**Engine Control:**

SLT Top Mount Control .................. CH5600P

**Options/Service Items:**

Optional Neutral Safety Switch ...... CA69009P

Cable Attachment Kit (3300/Dual Station) ........ CA69022P

3300 Heavy Duty Brass Pivot Kit (2) ............ CA27563P

Replacement Red Knob ................... 4009912
Replacement Black Knob .................. 4009819

Stainless Steel Throttle Knob (grooved) .......... CA69052P**
Stainless Steel Shift Knob (smooth) ............... CA69051P**

** Fits most controls with 3/8-24 threaded levers.

CH5600 Mounting Hardware Kit ...... CA69013P
(Includes control mounting hardware, 1 detent, 1 throttle friction screw & lever stops.)

Replacement Stainless Steel Lever CA69060P
(Fits Teleflex® CH5600 SLT and Morse® Twin SR controls only.)

Connection Kits . (see Connection Kits section)

**Compatible Cables:**

**OEM/Univ. 3300 Types**
Mercury 3600 type cable (premium) . CC630XX
US Marine® L-Drive shift cable .......... CC213XX

**Universal 3300 Types**
3300 cable (standard) .................... CC172XX
3300 cable (midrange) .................. CC330XX
33C cable (midrange) ................... 032377-003-XX
33C Supreme (midrange) .............. 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

(May require purchase of cable connection kit(s) to complete control system installation.)
Teleflex CH4400 control

(single-function control — each lever controls throttle OR shift)

This stylish, low profile top mount control features twin levers/single action with visual and tactile throttle/shift identification. Available in chrome or satin black, with straight or raked handles and smooth or ratchet-type friction, it can be used for single or twin stations. CH4400s accept 33 type control cables and are ideal drop-in replacements for older Teleflex CH4500/4800 units. Additional hardware may be required for twin station use.

Applications:

For single or dual station applications with single or twin engines (including outboards utilizing an optional neutral safety switch kit). Uses 33 type universal control cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Dual lever, single action for throttle & shift.
- Dual station capability.
- Stylish look with either straight or raked handles.
- Positive detent for shifts.
- Push or Pull to operate throttle and/or shift.
- Includes hardware for two 3300/33 control cables.
- Optional neutral safety switch.
- Adjustable ratchet feel for precise throttle operation.
- Removable knobs for recessed mounting.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)
Engine Controls:

STRAIGHT HANDLE MODELS:
- Chrome/Smooth Friction................. CH4451P
- Chrome/Ratchet Friction............... CH4452P
- Black/Smooth Friction.................. CH4453P
- Black/Ratchet Friction.................. CH4454P

RAKED HANDLE MODELS:
- Chrome/Smooth Friction.................. CH4481P
- Chrome/Ratchet Friction............... CH4482P
- Black/Smooth Friction.................. CH4483P
- Black/Ratchet Friction.................. CH4484P

Options/Service Items:

Optional Neutral Safety Switch ...... CA68075P
3300 Heavy Duty Brass Pivot Kit (2) CA27563P

CH4400 Cover (Black Plastic) .......... 6800611
CH4400 Cover (Chrome Plastic) ....... 6800618

CH4400 Knob (Chrome Zinc Alloy) .... 6801812
CH4400 Knob (Black Aluminum) ....... 6801811
CH4400 Knob (Red Aluminum) ......... 6801815
CH4400 Screw for Knob............... 6801918
CH4400 Black Knob Cap (Shift) ....... 6802111
CH4400 Red Knob Cap (Throttle) ...... 6802111

CH4400 Hardware Kit.................. CA68057P

Compatible Cables:

OEM/Univ. 3300 Types
- Mercury 3600 type cable (premium) . CC630XX
- US Marine® L-Drive shift cable ........ CC213XX

Universal 3300 Types
- 3300 cable (standard) .................. CC172XX
- 3300 cable (midrange) ................. CC330XX
- 33C cable (midrange) .................. 032377-003-XX
- 33C Supreme (midrange) ............. 301947-003-XXX
- TFXTREME 3300 cable (premium) ... CC633XX

(May require purchase of cable connection kit(s) to complete control system installation.)
Morse MY control

(single-function control — each lever controls throttle OR shift)

An incredible blend of form, function and flexibility. Exciting styling, smooth operation and rugged, compact form make the MY ideal for many applications, especially the control of multiple engines. MY gives you a vast array of control choices which add style to any cockpit, yet occupy a minimum amount of space.

Applications:

For single, twin, triple and quad engines (including outboards utilizing an optional neutral safety switch kit). Ideal for multiple engine control. MY controls are for single station use.

Uses 33 type universal cables. Not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Available in two, four, or six lever configurations; levers available in either fore- or aft-canted positions.
- Levers available in black, satin and polished stainless steel finishes.
- Positive shift detents.
- Smooth ratchet throttle or optional adjustable throttle brake.
- Neutral safety switch to help prevent starting in gear.
- Uses 33 type universal control cables.
- Meets/exceeds all applicable industry standards.

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CONTROL TYPES: page 174
SELECTION GUIDE: page 176
SUPPORT: www.teleflexmorse.com or call 610-495-7011

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 type 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.)
Engine Controls:

BLACK HOUSING, BLACK LEVERS:
MY (1 throttle T, aft cant) ....................... 311110-420
MY (1 shift, 1 throttle ST, aft cant) .......... 311111-460
MY (2 throttle TT, aft cant) ................. 311120-460
MY (2 shift SS, aft cant) ......................... 311193-460
MY (2 shift, 2 throttle STTS, aft cant) .... 311122-460
MY (2 shift, 2 throttle SSTT, aft cant) .... 311188-460
MY (3 shift, 3 throttle SSSTTT, aft cant) 311133-460
(All above: ratcheting throttle with no friction brake.)

MY (1 shift, 1 throttle ST, fwd. cant) ....... 311111-161
MY (2 shift, 2 throttle SSTT, aft cant) .... 311188-461
MY (3 shift, 3 throttle SSSTTT, fwd. cant) . 311133-151
(All above: resistance throttle with friction brake.)

BLACK HOUSING, SATIN LEVERS:
MY (1 shift, 1 throttle ST, fwd. cant) ....... 311111-270
(Above: ratcheting throttle with no friction brake.)
MY (1 shift, 1 throttle ST, fwd. cant) ....... 311111-261
(Above: resistance throttle with friction brake.)

BLACK HOUSING, STAINLESS LEVERS:
MY (1 shift, 1 throttle ST, aft cant) ........... 311111-521
(All above: ratcheting throttle with no friction brake.)
MY (1 shift, 1 throttle ST, aft cant) ........... 311111-560
MY (2 shift, 2 throttle STTS, aft cant) .... 311122-560
MY (3 shift, 3 throttle SSSTTT, aft cant) 311133-560
(All above: resistance throttle with friction brake.)

WHITE HOUSING, SATIN LEVERS:
MY (2 shift, 2 throttle STTS, aft cant) .... 311113-560
MY (2 shift, 2 throttle SSTT, aft cant) .... 311118-560
(All above: ratcheting throttle with no friction brake.)

WHITE HOUSING, STAINLESS LEVERS:
MY (2 shift, 2 throttle SSTT, fwd. cant) .. 311118-261
(Above: resistance throttle with friction brake.)

WHITE HOUSING, BLACK LEVERS:
MY (1 shift, 1 throttle ST, aft cant) .......... 311109-460
(Above: ratcheting throttle with no friction brake.)

Number Code:
Because there are many combinations available with the MY Control, a part numbering system has been developed to help you identify the part number of the control configuration desired. Please note the three numbers following the base number to order the required control.

MY (ST)
SINGLE SHIFT, SINGLE THROTTLE

Options/Service Items:
MY Mounting Screws - Black .................... 306047
MY Pivot Kit (Single Cable) ................. 306048-001
MY Pivot Kit (Two Cables) ...................... 306048-002
MY Neutral Safety Switch Kit ................... 306594
MY Detent & Spring Kit ........................... 306595
MY Throttle Friction Kit .......................... 306615

Compatible Cables:
3300 Universal Cables (10-32 threaded ends)
Purchase of cable connection kit(s) may be required to complete control system installation.
Morse ST/STB controls

(single-function one-lever control)

The ST & STB controls are economical, and durable, with a simple, elegant design. Single-function lever moves one cable. Versions are available for 33 and 43 type cables, with or without throttle brake.

Applications:

ST controls are great choice for many inboards and sailboats, stern drives and outboards. The STB control includes a throttle brake and can shift Berkeley jets when a foot throttle is used. ST/STB units can utilize 33 type universal control cables. ST-HD and STB-HD controls use 43 type control cables. ST/STB controls are for single-station use only and are not suitable for use with Mercury® and OMC® OEM type control cables.

Features:

- Compact, rugged design and classic traditional styling.
- Durable heavy chrome finish.
- Models for 33 and 43 type cables.
- Available with or without throttle brake.
- Mechanical advantage - 3.20:1.
- Meets/exceeds all applicable industry standards.

NOTE: When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing universal 33 and 43 type 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.)
mechanical control, many engines, single station

**Engine Controls:**

**ST CONTROLS (NO BRAKE):**
- ST Control (33 type cables) .......... 031791
- ST-HD Control (43 type cables) .... 039115

**STB CONTROLS (WITH BRAKE):**
- STB w/external brake (33 type cables) .......... 044777
- STB-HD w/external brake (43 type Cables) .......... 045978

**Options/Service Items:**

- Hand Lever Assembly, Chrome ..... 031046-002
- Ball Knob, Black (replaces 035232-044) .......... 4009819
- Stainless Steel Shift Knob (smooth) .......... CA69051P**
  ** Fits most controls with 3/8-24 threaded levers.

- Throttle Cable Brake .......... 044386
- Mounting Hardware Kit (30 Series Kit) .......... 062279

**Compatible Cables:**

**OEM/Univ. 3300 Types**
- Mercury 3600 type cable (premium) CC630XX
- US Marine® L-Drive shift cable CC213XX

**Universal 3300 Types**
- 3300 cable (standard) CC172XX
- 3300 cable (midrange) CC330XX
- 33C cable (midrange) 032377-003-XX
- 33C Supreme (midrange) 301947-003-XXX
- TFXTREME 3300 cable (premium) CC633XX

**Universal 43 Types**
- TFXTREME 4300 BC cable CC692XX
- TFXTREME 4300 CC cable CC693XX

(May require purchase of cable connection kit(s) to complete control system installation.)
Morse KE-4 control

(accepts these cables:)
Universal 3300 Types

**Applications:**
Electronic stand-alone controls are ideal for larger, multi-station boats, especially those applications in which a mechanical control cannot deliver the desired feel and performance. For nearly all engine types.

**Features:**
- Works with any engine: outboard, stern drive or inboard.
- Single or twin engine control; dual function for each lever.
- Up to 4 control heads.
- Optional hand-held remote control: great for docking!
- Built-in station selection switch.
- Engine Sync option available. (Throttle only.)
- Adjustable gear shift delay.
- Mechanical backup (easy to use “get home” system).
- Built-in overload protection & diagnostics.
- Visual failure alarm standard (audio alarm optional).
- Uses standard 33C type control cables on throttle/shift actuator.
- 12 and 24 volt capability.
- Meets/exceeds all applicable industry standards.

**KE-4 or i6000?**

*Use KE-4 if:*
- There are more than 2 stations.
- Throttle and Shift are actuated mechanically (KE-4 has no electronic throttle interface).
- Trolling valve control required.
- Throttle Sync only is needed.
- Electrical system is 12 or 24 volt.
- Hand-held remote desired.
- CANbus interface not needed.

**NOTE:** When properly installed, these engine controls will connect to outboard, stern drive and inboard engines, utilizing an electronic interface, universal 33 type cables and appropriate engine connection kits.

**DIMENSIONS:** page 219
**CONTROL TYPES:** page 174
**SELECTION GUIDE:** page 176
**SUPPORT:** www.teleflexmorse.com or call 610-495-7011
## Electronic Control, Most Engines, Up to 4 Stations

### Engine Control Items:

#### Control Heads:
(Select one control per station.)

<table>
<thead>
<tr>
<th>Control Type</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Lever-1 Engine (LH)-Gold</td>
<td>NM0511-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (RH)-Gold</td>
<td>NM0521-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (LH)-Chrome</td>
<td>NM0534-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (RH)-Chrome</td>
<td>NM0534-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (LH)-White</td>
<td>NM0537-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (RH)-White</td>
<td>NM0538-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (LH)-Black</td>
<td>NM0540-00</td>
</tr>
<tr>
<td>Single Lever-1 Engine (RH)-Black</td>
<td>NM0541-00</td>
</tr>
<tr>
<td>Twin Lever-2 Engines-Gold</td>
<td>NM0510-00</td>
</tr>
<tr>
<td>Twin Lever-2 Engines-Chrome</td>
<td>NM0533-00</td>
</tr>
<tr>
<td>Twin Lever-2 Engines-White</td>
<td>NM0536-00</td>
</tr>
<tr>
<td>Twin Lever-2 Engines-Black</td>
<td>NM0539-00</td>
</tr>
</tbody>
</table>

#### Electronic Control Unit (ECU):
(One required per engine; select based on onboard DC voltage.)

<table>
<thead>
<tr>
<th>ECU Type</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECU-12 Volt DC</td>
<td>NM0477-00</td>
</tr>
<tr>
<td>ECU-24 Volt DC</td>
<td>NM0478-00</td>
</tr>
</tbody>
</table>

#### Harnesses:

<table>
<thead>
<tr>
<th>Harness Type</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Control Harness</td>
<td>NM0616-XX</td>
</tr>
<tr>
<td>Remote Control Harness 100M</td>
<td>NM0616-A0</td>
</tr>
<tr>
<td>Comm Harness 5M (16.40 Feet)</td>
<td>NM0619-05</td>
</tr>
<tr>
<td>Power Harness 5M (16.40 Feet)</td>
<td>NM0414-28</td>
</tr>
<tr>
<td>Power Harness 10M (32.80 Feet)</td>
<td>NM0414-33</td>
</tr>
</tbody>
</table>

#### Actuator:
(1 required per engine; controls both throttle and shift.)

<table>
<thead>
<tr>
<th>Actuator Type</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actuator-Throttle &amp; Shift</td>
<td>NM0165-00</td>
</tr>
</tbody>
</table>

#### Actuator-Engine Interface Cables:
(Two cables required per actuator. XX = length in feet. Most control cables are available in lengths from 6 to 50 feet. See the Teleflex Marine list price sheet for current offering. Where Part Numbers are indicated, XX = length in feet. Lengths above 30 feet are only available in two-foot increments (32, 34, 36, etc.))

<table>
<thead>
<tr>
<th>Cable Type</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>33C Supreme (midrange)</td>
<td>301947-003-XXX</td>
</tr>
<tr>
<td>TFXTREME 3300 cable (premium)</td>
<td>CC633XX</td>
</tr>
</tbody>
</table>

Cables have a 10-32 threaded terminal and a clamp-type fitting at each end. 3" nominal travel. Purchase of cable connection kit(s) may be required to complete the installation.

<table>
<thead>
<tr>
<th>Connection Kit</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mercury 3600 type cable (premium)</td>
<td>CC630XX</td>
</tr>
</tbody>
</table>

Separate connection kit generally not required with this cable.

<table>
<thead>
<tr>
<th>Connection Kit</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Head Cover, Gold</td>
<td>NM0508-01</td>
</tr>
<tr>
<td>Control Head Cover, Chrome</td>
<td>NM0533-01</td>
</tr>
<tr>
<td>Control Head Cover, White</td>
<td>NM0536-01</td>
</tr>
<tr>
<td>Control Head Cover, Black</td>
<td>NM0539-01</td>
</tr>
<tr>
<td>Control Head Mounting Gasket</td>
<td>NM0508-06</td>
</tr>
<tr>
<td>Control Head Single Lever Cover Plug</td>
<td>NM0509-01</td>
</tr>
<tr>
<td>Cover Screws</td>
<td>NM0804-00</td>
</tr>
<tr>
<td>Keypad-Single Lever models</td>
<td>NM0811-00</td>
</tr>
<tr>
<td>Keypad-Twin Lever models</td>
<td>NM0810-00</td>
</tr>
<tr>
<td>Handle Decal</td>
<td>NM0808-00</td>
</tr>
<tr>
<td>Switch Cover</td>
<td>NM0508-03</td>
</tr>
<tr>
<td>Actuator Front Cover</td>
<td>NM0156-14</td>
</tr>
<tr>
<td>Manual Backup Cover</td>
<td>NM0805-00</td>
</tr>
<tr>
<td>Access Door Kit</td>
<td>NM0807-00</td>
</tr>
<tr>
<td>Latch Kit</td>
<td>NM0801-00</td>
</tr>
<tr>
<td>Sensor Assembly</td>
<td>NM0812-00</td>
</tr>
<tr>
<td>Cable Hardware</td>
<td>NM0802-00</td>
</tr>
<tr>
<td>Aux. Cable Hardware</td>
<td>NM0806-00</td>
</tr>
<tr>
<td>Cable Grommet</td>
<td>NM0803-00</td>
</tr>
<tr>
<td>Cable Clip</td>
<td>NM0809-00</td>
</tr>
</tbody>
</table>
Optional KE-4a Hand Held Control:

The KE-4a Hand Held Control is an option to the KE-4a's single lever, dual function control system. It allows the boater to actually carry the shift and throttle control about the boat when docking or maneuvering. The KE-4a single lever, dual function control system must be installed prior to installing the hand held control.

Features:
- Ergonomic design like the fixed KE-4a control head.
- Twin and single engine controls available.
- Socket harness plugs into existing KE-4 or KE-4a control units using standard remote control harness and functions as an additional control head.
- Hand held control detachable from the wall socket connector.
- Hand held control has a 26.2 foot (8 meter) detachable harness.
- Control lever incorporates a neutral lock mechanism for improved safety.
- Optional two-way stop switch with lanyard for emergency cut-off.
- Control is water resistant and meets or exceeds all industry standards.
- Dual power supply facility.

Hand Held Control Overview:

KE-4 or i6000?

Use i6000 if:
- There are 1 or 2 stations.
- There are 1-3 engines.
- Propulsion is via a jet.
- Throttle and Shift are actuated mechanically or electronically.
- Full One-Touch Engine Synchronization across all ranges is desired.
- Traditional styling desired.
- Electrical system is 12 volt.
- CANbus interface needed.

Pull off the lanyard or press the red knob to stop the engine(s).

The lamp ON during the hand held control in use.
- The lamp flashes slow during neutral throttle operation.
- The lamp flashes fast during warnings.

To select the stations.
- To set or cancel the neutral throttle operation.
- Press to stop the buzzer.

To the Control Unit via Socket Harness and Remote Control Harness.
electronic control, most engines, up to 4 stations

**Basic KE-4 System Overview:**

The following schematic shows elements of the KE-4 control system in a typical twin engine/twin station application.

For part numbers associated with the items depicted below, please see the previous two pages.
Morse ETC control

(electronic throttle control — for engines with electronic governors)

Now there is added flexibility in remote operation of electronic governors.

Features:

- Meets all engine manufacturer specifications.
- Available in micro-adjustable or lever-operated models.
- Low and high RPM settings.
- Pigtail available.
- Can be used with existing mechanical controls.
- Custom designed levers for application versatility.

DIMENSIONS: page 220
CONTROL TYPES: page 174
SELECTION GUIDE: page 176
SUPPORT: www.teleflexmorse.com or call 610-495-7011

CONNECTORS REQUIRED:

Caterpillar (311788) - Deutsch Mating Connector: DT, 06 3S Plug Connector (1), W3 S Secondary Lock (1), 0452-16141 Contact Socket 16 to 18 AWG (3). Caterpillar (311873) - Deutsch Mating Connector: HD 14-3-96P Connector (1), 0460-202-16141 pin (3).

John Deere, Detroit Diesel, Cummins without Idle Validation - Mating Connector Packard Electric Weather Pack: Three Way Tower P/N 12015793 (1), Male Pin P/N 12033647 (for AWG Wire) Gold Plated (3), Wire Cable Seal P/N 12089040 (3).

Cummins with Idle Validation - Deutsch Mating Connector: DT 06-6S Plug (1), 0462-201-16141 Socket (6), W6S Secondary Lock Part (1).

Morse ETC control (electronic throttle control — for engines with electronic governors)

Now there is added flexibility in remote operation of electronic governors.

Features:

- Meets all engine manufacturer specifications.
- Available in micro-adjustable or lever-operated models.
- Low and high RPM settings.
- Pigtail available.
- Can be used with existing mechanical controls.
- Custom designed levers for application versatility.

CONNECTORS REQUIRED:

Caterpillar (311788) - Deutsch Mating Connector: DT, 06 3S Plug Connector (1), W3 S Secondary Lock (1), 0452-16141 Contact Socket 16 to 18 AWG (3). Caterpillar (311873) - Deutsch Mating Connector: HD 14-3-96P Connector (1), 0460-202-16141 pin (3).

John Deere, Detroit Diesel, Cummins without Idle Validation - Mating Connector Packard Electric Weather Pack: Three Way Tower P/N 12015793 (1), Male Pin P/N 12033647 (for AWG Wire) Gold Plated (3), Wire Cable Seal P/N 12089040 (3).

Cummins with Idle Validation - Deutsch Mating Connector: DT 06-6S Plug (1), 0462-201-16141 Socket (6), W6S Secondary Lock Part (1).
electronic control, engines with electronic governors

<table>
<thead>
<tr>
<th>ENGINE MODEL</th>
<th>ROTATION</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MICRO-ADJUSTABLE ETC CONTROL:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caterpillar - 12VDC Input</td>
<td></td>
<td>311421</td>
</tr>
<tr>
<td>Caterpillar - 8VDC CPU Input</td>
<td></td>
<td>310730</td>
</tr>
<tr>
<td>Cummins - Celect Plus w/Idle Validation</td>
<td></td>
<td>311440</td>
</tr>
<tr>
<td>Detroit Diesel - DDEC I, II, III</td>
<td>CW</td>
<td>310714-001</td>
</tr>
<tr>
<td>Detroit Diesel - DDEC I, II, III</td>
<td>CCW</td>
<td>310714-004</td>
</tr>
<tr>
<td>John Deere - All</td>
<td>CW</td>
<td>310714-002</td>
</tr>
<tr>
<td>John Deere - All</td>
<td>CCW</td>
<td>310714-005</td>
</tr>
<tr>
<td><strong>LEVER OPERATED ETC CONTROL:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caterpillar - 12VDC Input</td>
<td></td>
<td>311873</td>
</tr>
<tr>
<td>Caterpillar - 8VDC CPU Input</td>
<td></td>
<td>311788</td>
</tr>
<tr>
<td>Cummins - Celect Plus w/ Idle Validation</td>
<td></td>
<td>311821</td>
</tr>
<tr>
<td>Cummins - w/o Idle Validation</td>
<td>CCW</td>
<td>311789-003</td>
</tr>
<tr>
<td>Cummins - w/o Idle Validation</td>
<td>CW</td>
<td>311789-001</td>
</tr>
<tr>
<td>Detroit Diesel - DDEC I, II, III</td>
<td>CW</td>
<td>311789-001</td>
</tr>
<tr>
<td>Detroit Diesel - DDEC I, II, III</td>
<td>CCW</td>
<td>311789-003</td>
</tr>
<tr>
<td>John Deere - All</td>
<td>CW</td>
<td>311789-002</td>
</tr>
<tr>
<td>John Deere - All</td>
<td>CCW</td>
<td>311789-004</td>
</tr>
</tbody>
</table>

*CW = Clockwise; CCW - Counter Clockwise*

Options/Service Items:

Hand Lever Assembly .................. 031765-013
SR Hand Lever .......................... 312018
ST Hand Lever ......................... 031765-013
Lever Operated ETC Mount Bracket .... 311800
Cable Lever Assembly .................. 311814
Pigtail for 310714 part numbers ....... 306777

3300 cable (standard) ................. CC172XX
3300 cable (midrange) ................. CC330XX
33C cable (midrange) .................. 032377-003-XX
33C Supreme (midrange) .............. 301947-003-XXX
TFXTREME 3300 cable (premium) ... CC633XX

Purchase of cable connection kit(s) may be required to complete control system installation.
Teleflex ProTrim control

(Control any one of these functions . . .)

Engine Trim/Tilt
Jackplate
Horn

(. . . or any two with Pro Trim Dual!)

Trim control the way it’s meant to be . . .
at your fingertips. With Pro Trim from Teleflex, you can keep both hands on the wheel and concentrate on your driving. Its clean, modern design looks at home in any cockpit and there are no cords to tangle around the steering wheel, a big plus for boats with hydraulic steering! The Pro Trim single-switch controls one function (engine trim or jackplate) Pro Trim Dual controls two functions (trim and jackplate).

Applications:
Pro Trim is a “bolt-on” for all popular Teleflex steering systems and is attractively packaged, with everything you need. Also suitable for use with Morse® Command 200 rack & pinion steering, and it’s the only trim switch recommended for SeaStar and SeaStar PRO hydraulic steering systems!

Features:
- Momentary-on switch is off in its center “at-rest” position; actuates in up and down directions.
- UV-Stabilized ABS switch cover blends with dash.
- Strong fusion-coated bracket fits most steering systems and adjusts for regular or deep-dish wheels.
- Heavy duty marine wiring harness, color-coded to match existing trim and jackplate wiring.
- Durable Mylar® decals allow labelling of switch functions.
- All mounting hardware and complete, user-friendly instructions included in attractive clamshell package!

NOTE: When properly installed, this engine trim control allows adjustment of trim settings on various engines by attaching to either a bezel or boot (mechanical & tilt steering) or the front of a helm (SeaStar hydraulic steering) and by splicing into existing engine trim wiring. Mechanical steering bezels must allow for proper installation of mounting screws (see Pro Trim instructions). Refer to engine manual for additional details about trim wiring. For Big-T, SeaStar rear mount helms and SeaStar Capilano applications, call Teleflex Marine technical service at 610-495-7011. Pro Trim is not suitable for use with pre-1991 SeaStar helms (with domed oil seal cover). Do not attempt to install Pro Trim on these helms. Please call Teleflex Canada technical service at 604-270-6899 for assistance.
electrical control, most engines with trim or jackplate

**Pro Trim Controls:**

Pro Trim Single Function ............... PT1000P  
Pro Trim Dual Function ................ PT2000P

**Pro Trim Fits:**

Any boat using one of the following Teleflex Marine steering systems:

- Safe-T mechanical steering.
- Rack & Pinion mechanical steering.
- NFB No FeedBack steering (all helms).
- SeaStar hydraulic steering.
- SeaStar PRO hydraulic steering.
- Morse Command 200 Rack & Pinion.

**Pro Trim Installation Overview:**

1. REMOVE STEERING WHEEL  
2. INSTALL PRO TRIM  
3. RE-INSTALL STEERING WHEEL

(MECHANICAL STEERING SHOWN)
Teleflex Marine Controls

**CH1700**

Mounting cutout dimensions:

- 10.845" at 95°
- 6.970" at 95°
- Cutout dimensions:
  - 1.548"
  - 5.970"
  - 13.055"

**CH7500**

Mounting cutout dimensions:

- 90°
- 90°
- 7.696"
- 4.274"
- 4.935"
- 3.465"
SL-3
Top Mounts
Morse.

SL-3
Side Mount
Morse.

CH2600/CH2700

MOUNTING CUTOUT DIMENSIONS:
Teleflex Marine Controls

CH2100

MOUNTING CUTOUT DIMENSIONS:

MT-3

Morse.

MOUNTING CUTOUT DIMENSIONS:

CH2200/CH2300

MOUNTING CUTOUT DIMENSIONS:
dimension information for control products

**MV-3**
Morse.

**S control**
Morse.

**SR control**
Morse.

Teleflex Marine Products: 610-495-7011 • www.teleflexmorse.com
Teleflex Marine Controls

**CH5600**

- **CUTOUT HOLE WIDTHS:**
  - 1 LEVER: 1.12" (28.4 mm)
  - 2 LEVER: 2.06" (52.4 mm)
  - 3 LEVER: 2.99" (75.9 mm)
  - 4 LEVER: 3.94" (100 mm)
  - 5 LEVER: 4.87" (123.7 mm)
  - 6 LEVER: 5.81" (147.6 mm)

**CH4400**

**MY controls**

**Morse.**

- **CUTOUT HOLE WIDTHS:**
  - 1 LEVER: 1.12" (28.4 mm)
  - 2 LEVER: 2.06" (52.4 mm)
  - 3 LEVER: 2.99" (75.9 mm)
  - 4 LEVER: 3.94" (100 mm)
  - 5 LEVER: 4.87" (123.7 mm)
  - 6 LEVER: 5.81" (147.6 mm)
dimension information for control products

**ST/STB**

*Morse.*

**KE-4**

*Throttle Control*

*Morse.*

For other dimensions, schematics and details, please refer to the KE-4 catalog.

**CONTROL HEAD CUTOUT:**

**ACTUATOR:**

ACTUATOR THICKNESS AT WIDEST POINT: 105mm (4.13”)

Space from installation surface by 70mm Min. 7.75°

219
Teleflex Marine Controls

ETC Electronic Throttle Control

Morse.

311440
CUMMINS

Panel Mounting Hole

311421
CATERPILLAR

311789-001/002/003/004
JOHN DEERE,
DETROIT DIESEL, CUMMINS
WITHOUT IDLE VALIDATION

311788 AND 311873
CATERPILLAR

311788

311873

311821
CUMMINS
WITH IDLE VALIDATION

311788

311873