

Introduction to Engine Controls

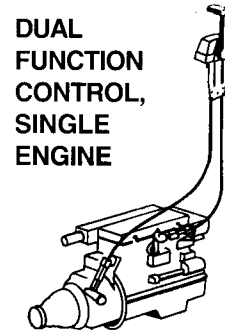
Dual-function

single-lever controls:

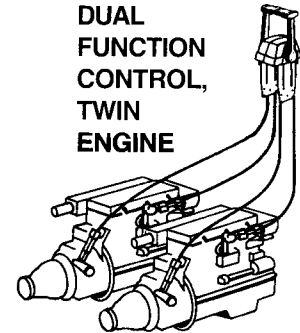
Dual-function single-lever controls operate both shift and throttle with a single lever. The control mechanism still uses two cables (one for shift and one for throttle), but movement of both cables and control of shift and throttle is achieved through just one lever.

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-



DUAL
FUNCTION
CONTROL,
SINGLE
ENGINE



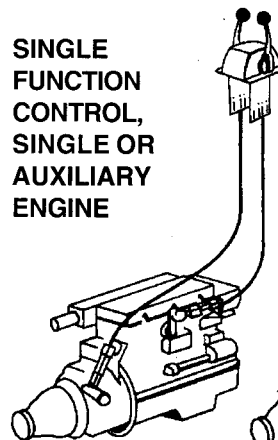
DUAL
FUNCTION
CONTROL,
TWIN
ENGINE

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.

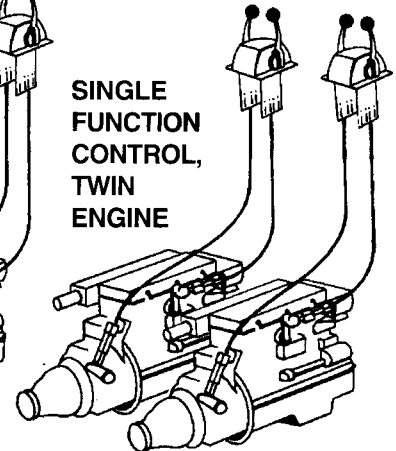
Single-function controls:

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.



SINGLE
FUNCTION
CONTROL,
SINGLE OR
AUXILIARY
ENGINE



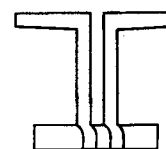
SINGLE
FUNCTION
CONTROL,
TWIN
ENGINE

Control head mounting:

A final choice in engine control styles is the type of mounting. TeleflexMorse offers controls for most applications and user preferences.



TOP MOUNT
(or Binnacle Mount)



FLUSH TOP
MOUNT



SIDE
MOUNT

Introduction to Engine Controls

Multiple station installations:

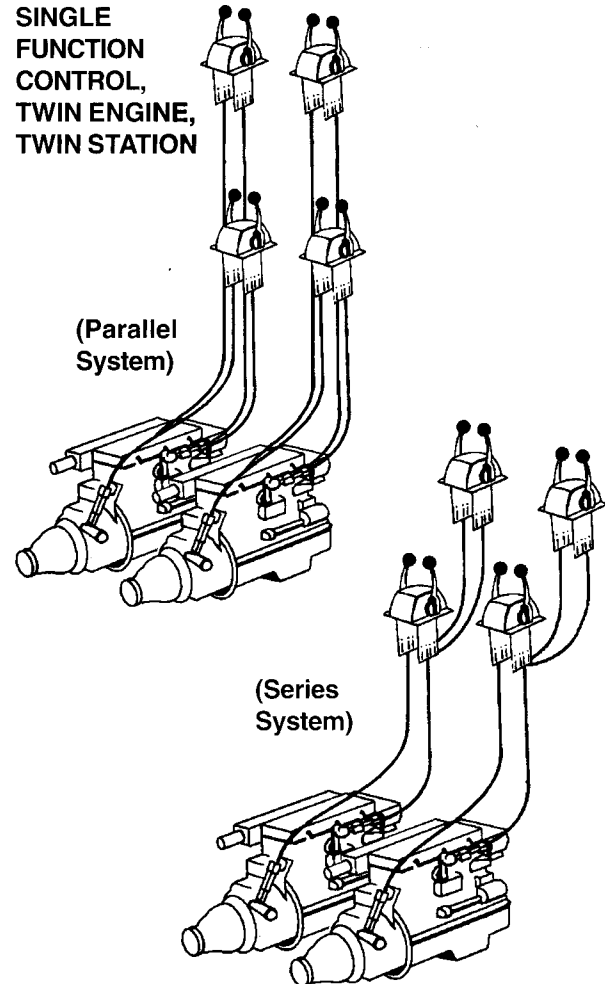
Dual or multiple station applications almost exclusively use single-function two lever controls. There are two basic system designs recommended for multiple stations:

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.

SINGLE FUNCTION CONTROL, TWIN ENGINE, TWIN STATION



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 it would 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.

$$\frac{\text{force}}{\text{mechanical advantage}} = \text{force required at control lever}^*$$

$$\frac{15 \text{ lbs.}}{2.77} = 5.42 \text{ pounds of force required at control lever}^*$$

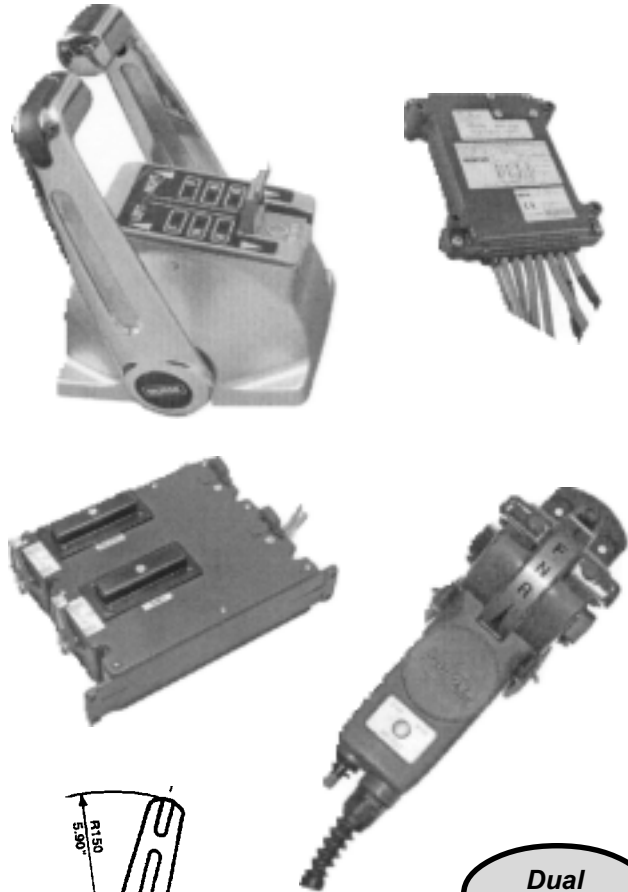
Understanding a control's mechanical advantage and the amount of force to be overcome at the engine is very important when specifying the appropriate control.

* Approximate: varies by cable efficiency and routing.

Morse KE-4 control

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.

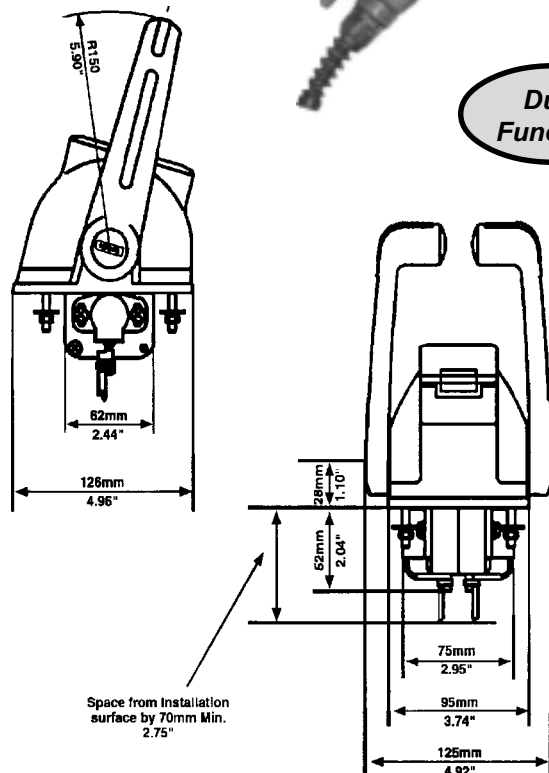


Dual Function

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.

The KE-4 set the standard for reliability in marine electronic controls. Its simplicity and proven design make it the choice for most multi-station/multi-engine control pleasure and work boats. KE-4 controls are available in either single or twin lever binnacle mount versions for single or multiple stations and up to two engines.



Morse KE-4 control

Engine Control Items:

CONTROL HEADS:

(Select one control per station.)

Single Lever-1 Engine(LH)-Gold	NM0511-00
Single Lever-1 Engine(RH)-Gold	NM0521-00
Single Lever-1 Engine(LH)-Chrome	NM0534-00
Single Lever-1 Engine(RH)-Chrome	NM0534-00
Single Lever-1 Engine(LH)-White	NM0537-00
Single Lever-1 Engine(RH)-White	NM0538-00
Single Lever-1 Engine(LH)-Black	NM0540-00
Single Lever-1 Engine(RH)-Black	NM0541-00
Twin Lever-2 Engines-Gold	NM0510-00
Twin Lever-2 Engines-Chrome	NM0533-00
Twin Lever-2 Engines-White	NM0536-00
Twin Lever-2 Engines-Black	NM0539-00

ELECTRONIC CONTROL UNIT (ECU):

(One required per engine; select based on onboard DC voltage.)

ECU-12 Volt DC	NM0477-00
ECU-24 Volt DC	NM0478-00

HARNESSES:

Remote Control Harness	NM0616-XX
<i>(XX = length in meters. Avail. 04-50 meters in 2M increments.)</i>	
Remote Control Harness 100M	NM0616-A0
<i>(One Remote Control Harness required per engine & station. A twin engine, twin station installation would require 4 RCHs.)</i>	
Comm Harness 5M (16.40 Feet)	NM0619-05
<i>(1 Comm harness required for twin engines.)</i>	
Power Harness 5M (16.40 Feet)	NM0414-28
Power Harness 10M (32.80 Feet)	NM0414-33
<i>(2 Power Harnesses required per engine.)</i>	

ACTUATOR:

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

Actuator-Throttle & Shift	NM0165-00
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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.)

33C Supreme (midrange)	301947-003-XXX
TFXTREME 3300 cable (premium)	CC633XX

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.

Options:

Hand Held Remote Control Unit	NM0906-00
Engine Sync Switch Kit	NJ0524-00
Engine Sync Master Harness	NM0605-01
Engine Sync Slave Harness	NM0605-02
Engine Sync Switch Harness	NM0617-XX
<i>(XX = length in meters. Avail. 05-40 meters in 5M increments.)</i>	
Circuit Breaker 20 AMP	NJ0514-00
Warning Buzzer-12 Volt DC	NJ0251-00
Warning Buzzer-24 Volt DC	NJ0515-00

Service Items:

Control Head Cover,Gold	NM0508-01
Control Head Cover, Chrome	NM0533-01
Control Head Cover, White	NM0536-01
Control Head Cover, Black	NM0539-01
Control Head Mounting Gasket	NM0508-06
Control Head Single Lever Cover Plug ..	NM0509-01
Cover Screws	NM0804-00
Keypad-Single Lever models	NM0811-00
Keypad-Twin Lever models	NM0810-00
Handle Decal	NM0808-00
Switch Cover	NM0508-03
Actuator Front Cover	NM0156-14
Manual Backup Cover	NM0805-00
Access Door Kit	NM0807-00
Latch Kit	NM0801-00
Sensor Assembly	NM0812-00
Cable Hardware	NM0802-00
Aux. Cable Hardware	NM0806-00
Cable Grommet	NM0803-00
Cable Clip	NM0809-00

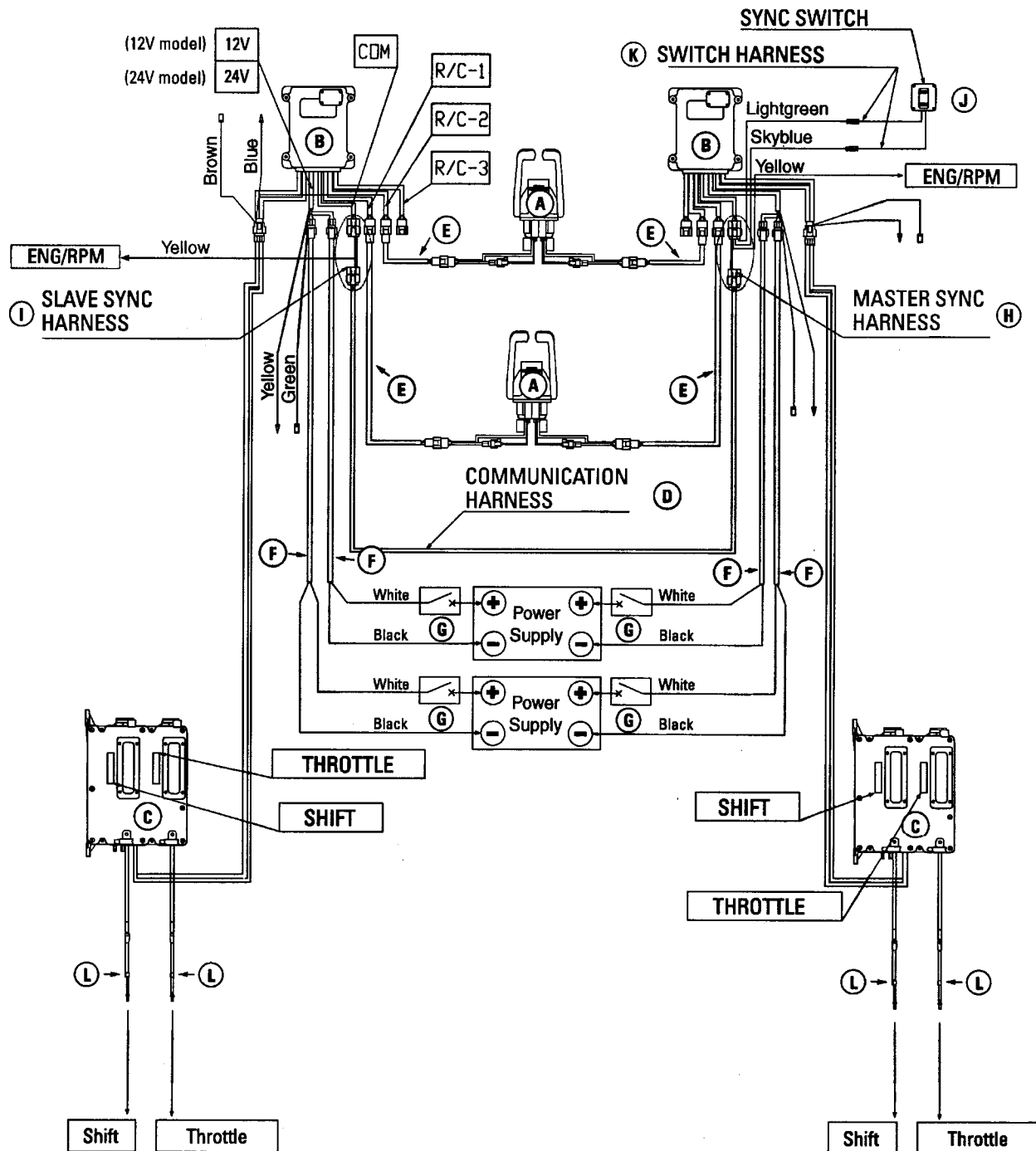
CONNECTION KITS FOR 33/3300 CABLES:

Mercury O/B & I/O	301901 or CA27319P
Mercury Inboard Kit (all)	302123 or CA27373P
Evinrude/Johnson (1979-up) ..	300557 or CA27320P
Evinrude/Johnson (pre-1979) .	301729 or CA27321P
OMC Stern Drive (all)	300557 or CA27320P

(Morse P/N shown first, comparable Teleflex P/N shown second.)

Morse KE-4 control

Schematic of a typical twin engine/twin station KE-4 control system



Hynautic

HYDRAULIC ENGINE CONTROLS

How The System Works

Hynautic hydraulic engine controls offer the boat owner a very positive, synchronized method of relaying remote commands from multiple stations to the engine's throttle and transmission linkages.

Engine controls have been packaged into systems for complete and simple installation. Systems have been designed for up to three stations, using either nylon tubing or copper tubing. A fourth station is possible, depending upon the length of the tubing run. Nylon tubing is preferred because of ease of installation and the material's expansion characteristics.

The slave unit is designed to deliver up to 120 inch-pounds of torque through 80 degrees of travel. Therefore, a system will accommodate marine engines and hydraulic transmissions used on most boats to 100 feet. These systems have also been adapted for operating bow thrusters and variable pitch propellers.

When the control handle of the sending unit is moved, mechanical energy is transformed into fluid energy by means of a rack and pinion attached to an internal piston. This piston expels fluid from the sending unit into all other control heads and the slave unit. The pistons in each of these units are thus moved an equal distance, causing a corresponding movement in the lever arm of each.

To control synchronization, the piston in each sender and slave contains two small valves. These are opened when the piston reaches the end of the stroke, allowing excess fluid to pass through the piston and into the system. Controls can be synchronized, if necessary, by rotating the lever arm of any control head from stop to stop.

The reservoir maintains the extra fluid and a constant pressure head (80 psi) for the system. The flow of fluid to and from the reservoir is regulated below the reservoir in the charging valve. As fluid expands due to engine temperatures, the excess liquid is expelled into the reservoir at a controlled rate. Likewise, fluid is returned to the system as temperatures drop.

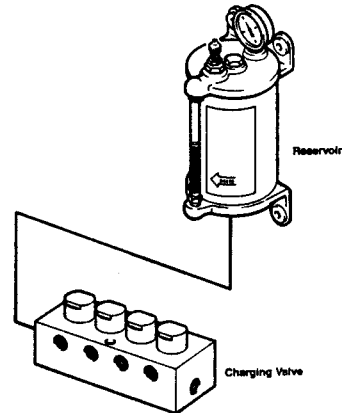
Each throttle slave unit contains an over-travel bungee in its linkage to the engine. This device assures that the slave piston will reach end stroke in each direction. Otherwise, the balance between senders and slave cannot be maintained.

The transmission slave unit has a mechanical detent to indicate a neutral position. Each throttle slave is equipped with an internal pilot check valve which prevents control arms from drifting back to an idle position.

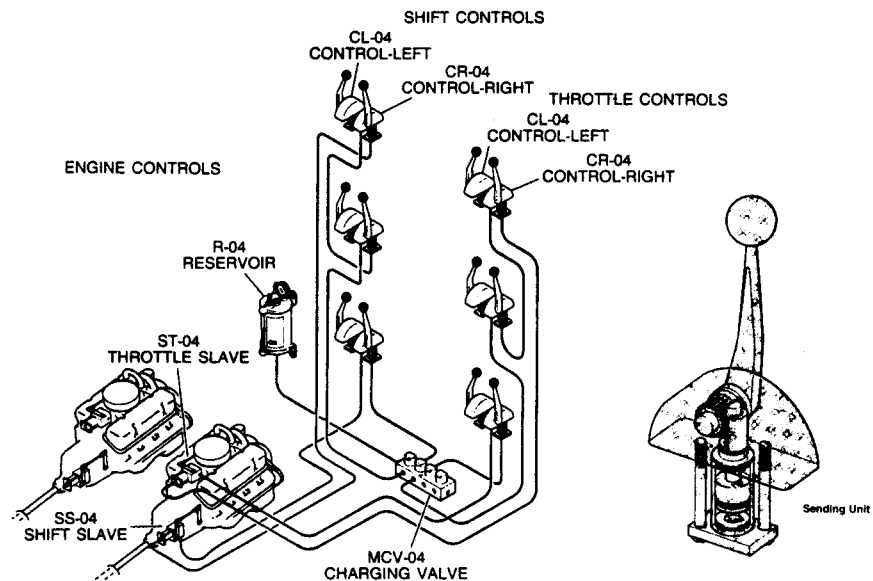
System Specifications

Hynautic engine control systems are easily adapted to 5/16" unplasticized nylon tubing. This tubing expands at a similar rate as the fluid, thus compensating for inevitable fluid expansion and contraction. The tubing is easy to install and special o-ring fittings are supplied with each system. Bleeding the system of air is accomplished in a manner similar to an automobile's brake system. Special patented bleeder fittings are provided. Systems for copper tube plumbing are also available.

Single Function



COMPONENT PART	DESCRIPTION	SINGLE ENGINE						TWIN ENGINES					
		MC-04-S1	MC-04-S1D	MC-04-S2	MC-04-S2D	MC-04-S3	MC-04-S3D	MC-04-T1	MC-04-T1D	MC-04-T2	MC-04-T2D	MC-04-T3	MC-04-T3D
R-13	Reservoir	1	1	1	1	1	1	1	1	1	1	1	1
MCVF-04	Valve Fittings	-	-	-	-	-	-	1	1	1	1	1	1
MCVF-05	Valve Fittings	1	1	1	1	1	1	-	-	-	-	-	-
CL-04	Control-left	1	1	2	2	3	3	2	2	4	4	6	6
CR-04	Control-right	1	1	2	2	3	3	2	2	4	4	6	6
CDF-04	Dual Mounting Plate	-	1	-	2	-	3	-	2	-	4	-	6
CF-04	Control Fittings	2	2	4	4	6	6	4	4	8	8	12	12
SS-04	Shift Slave	1	1	1	1	1	1	2	2	2	2	2	2
SSF-04	Slave Fittings	1	1	1	1	1	1	2	2	2	2	2	2
ST-06	Throttle Slave	1	1	1	1	1	1	2	2	2	2	2	2
STF-12	Slave Fittings	1	1	1	1	1	1	2	2	2	2	2	2



Morse MT-3 control

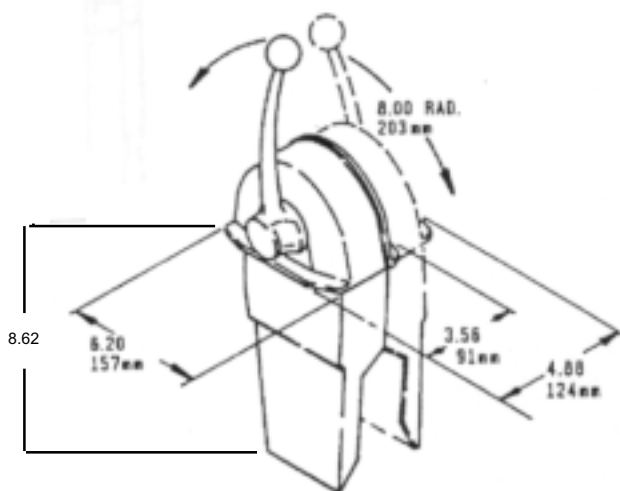
Features:

- 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.
- Mechanical advantage - shift 2.77:1/ throttle 3.57:1.
- Meets/exceeds all applicable industry standards.

Applications:

Great for single station inboards stern drives and outboards, single or dual engine. Perfect for applications in which a binnacle 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.*



308602



308601

Dual
Function

Engine Control:

SINGLE LEVER:

MT-3 Single 308601

SINGLE LEVER:

MT-3 Twin 308602

Options/Service Items:

Optional Neutral Safety Switch 051801-023

H.D. Kit-43C Cables, MT-3 Single.....308742

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

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.

Morse S control

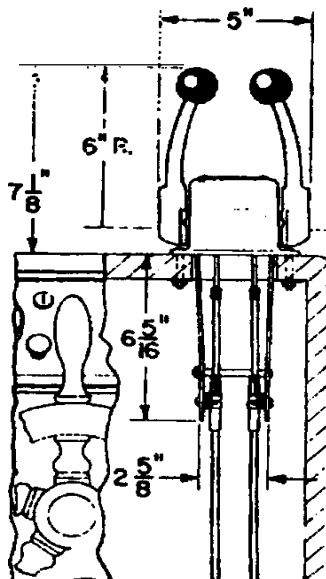
Features:

- 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.

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.*



31001-001



31002-001

Single Function

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

Morse SL-3 control

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, 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.

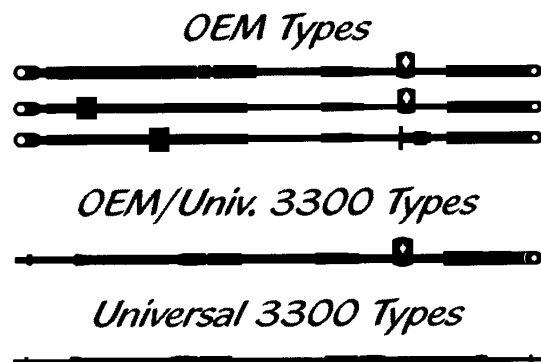


Applications:

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.

Attractive and astonishingly simple in design, the SL-3 is ideal for most boats. Offered in four styles, it's a snap to install without needing control modifications or tedious cable adjustments. And it accepts nearly every type of cable!

(accepts these cables:)



Morse SL-3 control

Engine Controls:

SL-3 TOP MOUNT SINGLE LEVER:

Top Mount Single Standard309476
 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 Standard309479
 Top Mount Twin Deluxe (trim)309480
 Top Mount Twin Deluxe (trim & tilt)309481

SL-3 SIDE MOUNT

Side Mount Standard309473
 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):

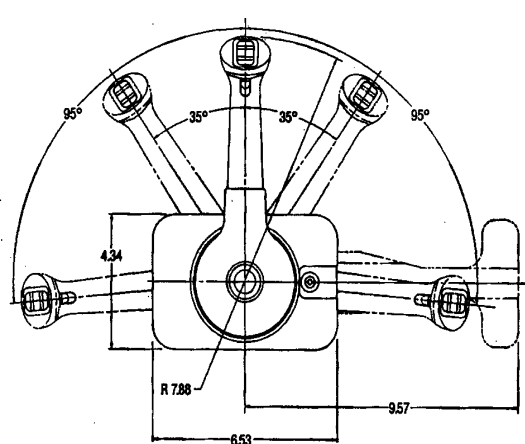
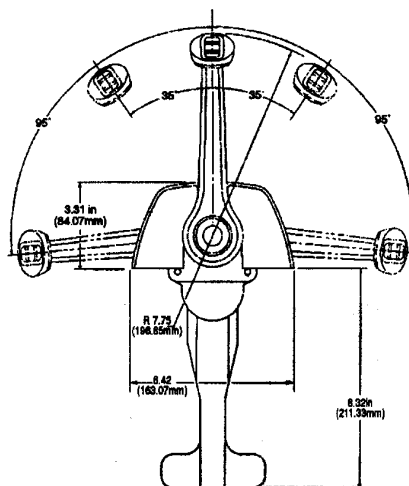
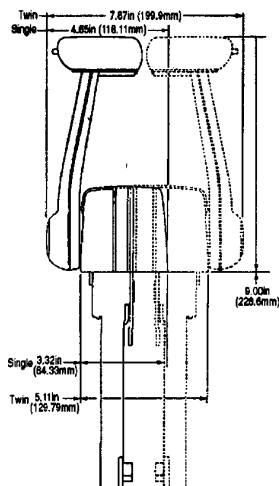
Side Mount Std. (cutoff switch) 311322-001
 Side Mount Deluxe (cutoff & trim) 311323-001
 Side Mount Deluxe (cutoff, trim & tilt)
 (5 wire - Volvo) 311324-001
 Side Mount Deluxe (cutoff, trim & tilt)
 (4 wire - non-Volvo) 311325-001

Options/Service Items:

Trim & Tilt Switch Kit315590
 Side Mount Tilt Switch/wire harness309509
 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 kit316941
 Top Mount (Twin) replace. parts kit316942
 Side Mount replacement parts kit317002
 Side Mount replacement parts kit
 (with cutoff switch)317003
 Cable Nest Kit
 (mounts all cables to controls) 212151-001



Phone: 800-225-0004 ☎ Fax: 908-486-1056
 e-mail: sales@sealandpower.com

Morse SR control

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.
- Mechanical advantage - shift 3.10:1/ throttle 3.10:1.
- Meets/exceeds all applicable industry standards.

36469-001



Single Function

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.

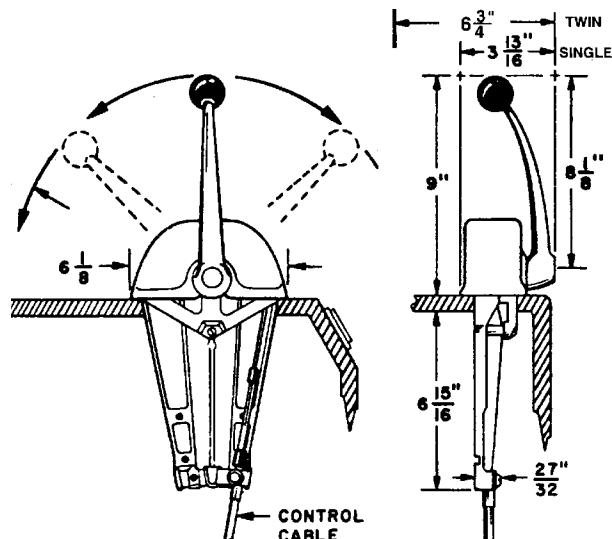
Replacement Stainless Steel Lever CA69060P
 (Fits Teleflex® CH5600 SLT and Morse® Twin SR controls only)

Mounting Hardware Kit, Twin 060991
 Replacement Dome Cover, Twin 047682

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.



Morse ST/STB controls

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.

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.

44777/45978



31791/39115

Single
Function

Engine Controls:

ST CONTROLS (NO BRAKE):

ST Control (33 type cables) 031791
ST-HD Control (43 type cables) 039115

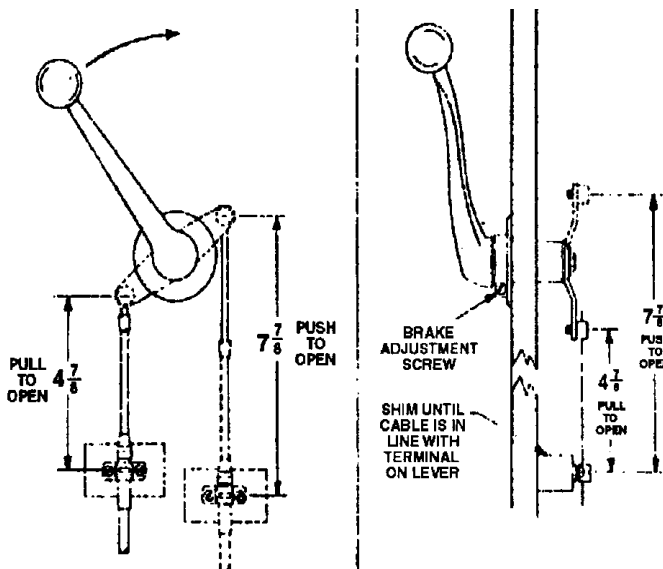
STB CONTROLS (WITH BRAKE):

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.

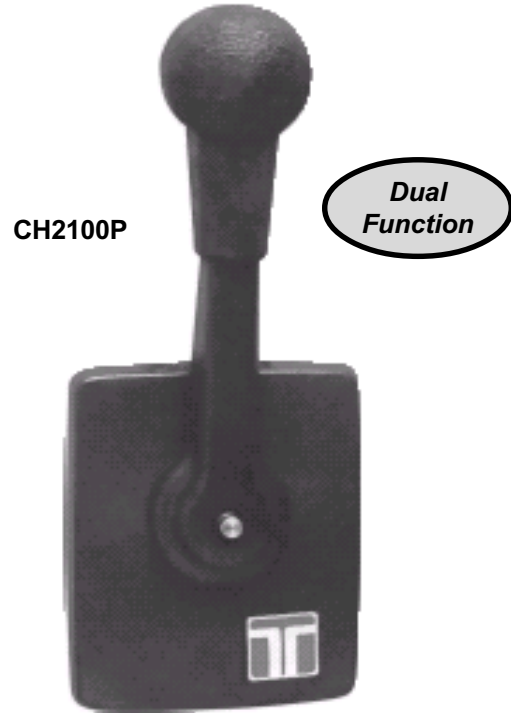
Throttle Cable Brake 044386
Mounting Hardware Kit
(30 Series Kit) 062279



Teleflex CH2100 control

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.



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.

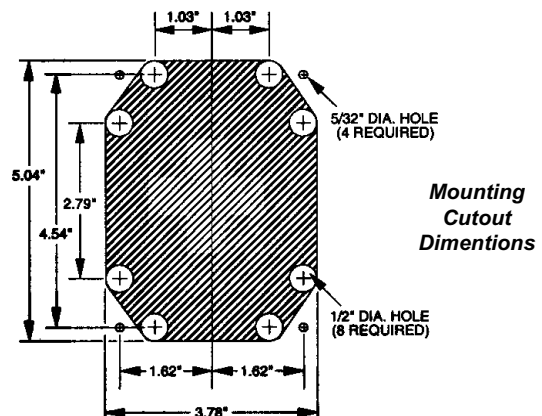
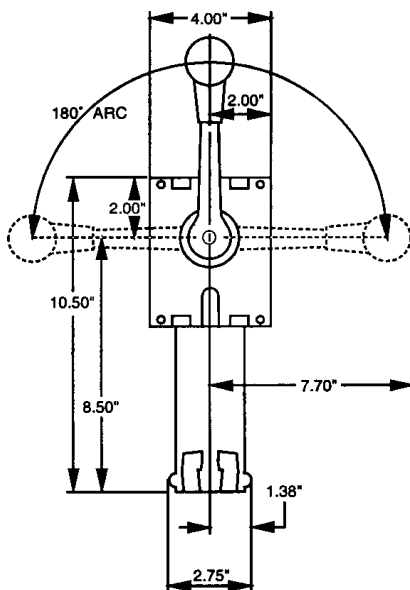
Not suitable for use with Mercury® and OMC® OEM type control cables.

Engine Control:

Side Mount Sailboat Control CH2100P

Options/Service Items:

Optional Neutral Safety Switch CA27090P



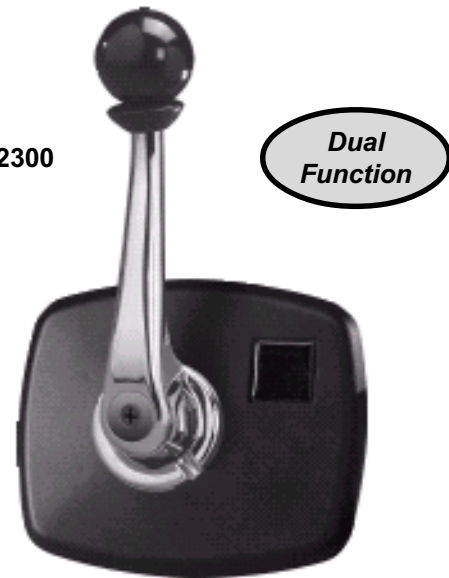
Phone: 800-225-0004 Fax: 908-486-1056
e-mail: sales@sealandpower.com

Teleflex CH2200/2300 controls

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.

CH2200/2300

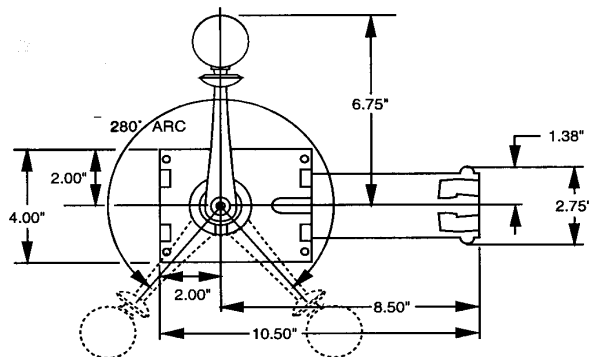


Applications:

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.



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

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

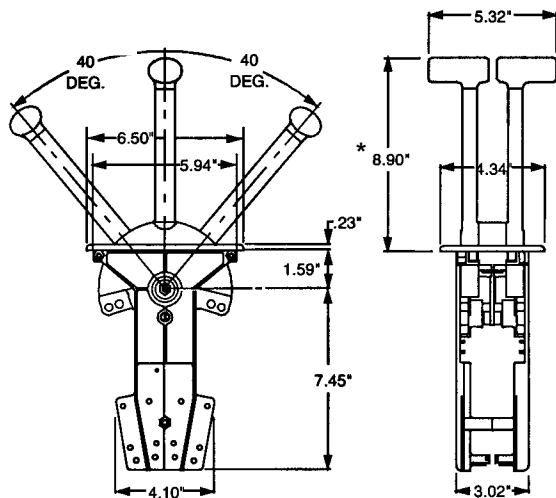
Teleflex CH4400 control

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.

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.*



*Raked Handle Models are 7.14" height above deck



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) 6802215
CH4400 Red Knob Cap (Throttle) 6802111

CH4400 Hardware Kit..... CA68057P

Teleflex CH5600 SLT control

(Self Locking Throttle)

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.

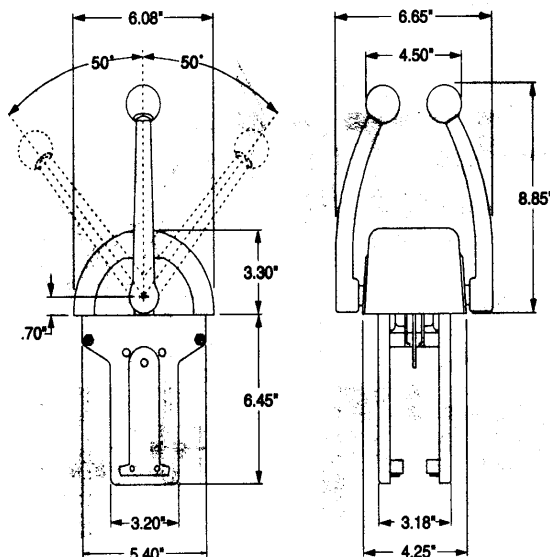
Drop-in replacement for Morse® Twin SR controls.

*standard on CH5600P version

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.*



CH5600

Single Function



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.)

Shift and Throttle Controls

Teleflex CH1700/7500



Teleflex CH2600/2700

Morse MV-2 & MV-3



Morse MY



Morse ETC

Micro-Adjustable



Lever-Operated



Contact us for more information on the above controls!

Phone: 800-225-0004 ☎ Fax: 908-486-1056
e-mail: sales@sealandpower.com