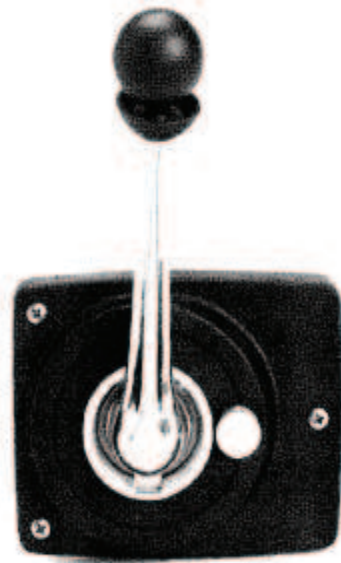


INSTALLER: THESE INSTRUCTIONS CONTAIN IMPORTANT SAFETY INFORMATION AND MUST BE FORWARDED TO THE BOAT OWNER.


INSTALLATION AND OPERATION OF **MV-2** SERIES SIDE MOUNT CONTROL

OWNER'S MANUAL



For Single Station Only

NOTICE

Throughout this manual, Warnings and Cautions, accompanied by the International Hazard Symbol , are used to alert the manufacturer or installer to special instructions concerning a particular service or operation that may be hazardous if preformed incorrectly or carelessly.

Warnings alone do not eliminate dangers, nor are they a substitute for safe boat handling and proper accident prevention measures. **Observe these alerts carefully!**

*These "safety alerts" alone cannot eliminate the hazards they signal. **Strict compliance to these special instructions** when installing, operating or performing maintenance and using common sense are the most effective accident prevention measures.*

DANGER

Immediate Hazards which WILL result in severe personnel injury or death.

WARNING

Hazards or unsafe practices which COULD result in severe personnel injury or death.

CAUTION

Hazards or unsafe practices which COULD result in injury, product and/or property damage.

NOTICE

Information that is important to the proper installation, operation and maintenance, but is not hazard related.

NOTICE

Before starting installation, read these instructions and the engine maker's instructions thorough or incorrect assembly can result in loss of control and cause property damage or injury.

Do not substitute parts from other manufacturers. They may cause a safety hazard which Teleflex Inc. (USA) cannot accept responsibility.

Cable installation and connections must be made in accordance with the motor manufacturer's instructions.

To insure best performance and free operation of all linkages and the remote control is essential. Follow the manufacturer's recommended procedures for adjustment and lubrication.

All specifications and features are subject to change without notice.

NOTICE

TELEFLEX MARINE HIGHLY RECOMMENDS THE INSTALLATION, AND USAGE OF AN ENGINE SHUT OFF SWITCH (SOMETIMES CALLED A "KILL" SWITCH) AS AN IMPORTANT EMERGENCY SAFETY FEATURE FOR BOATS. THIS SWITCH SHOULD BE CONNECTED BY A CORD TO THE BOAT DRIVER. SHOULD THE DRIVER BE THROWN FROM THE HELM POSITION, THE ENGINE WILL AUTOMATICALLY SHUT OFF.

THIS SHUT OFF SWITCH IS NOT A STANDARD PART OF THE CONTROL YOU ARE USING. IT CAN, HOWEVER, BE OBTAINED FROM MOST MARINE DEALERS AND DISTRIBUTORS.

Introduction

The Morse MV-2 Control is designed to provide convenient, one hand, single lever operation of shift and throttle for most popular outboards, inboard/outdrives and inboards equipped with hydraulic reverse gears.

A safety feature of the MV-2 is a Neutral Locking Hand Lever. It can only be disengaged from Neutral by raising the collar under the ball knob. The MV-2 accepts Teleflex Marine 3300 Cables or 3300 TFXtreme cables.

A neutral safety switch is standard, except on MV-2 controls assembled for inboard ski boats.

NOTICE

The following information shows the procedures necessary to make a correct installation.

General operation and adjustment information is provided, along with periodic maintenance information.

A replacement part availability for the control is provided should the need for replacements become necessary.

Control Configuration

This Section is provided to make sure you have the correctly configured control for your application.

Note: To determine the correct control assembly for inboards with hydraulic clutches, it is first necessary to determine whether the control cables must exert a "push" or "pull" action at the transmission to engage forward gear and a "push" or a "pull" action at the carburetor lever to open the throttle.

Operate the MV-2 control hand lever to learn which way shift and throttle arms function, for push or pull of control cables.

If the control is not assembled for proper action of shift and throttle function required by the engine, or left hand configuration is required, reassemble control as shown in the following instructions (figures 1 thru 5).

Repositioning Shift Arm

⚠ WARNING

If the neutral safety switch is not relocated when the shift arm is repositioned, damage to the switch and electrical wiring will occur.

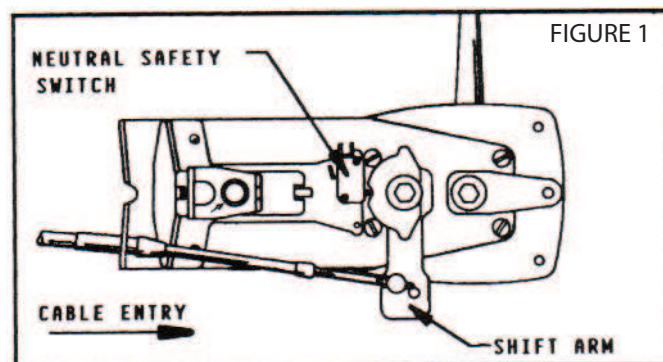
If the transmission shift function is different from the action of the control shift arm, reposition the arm by removing the hex head screw, large flat washer and black switch cam.

Pay attention to the 2 hole pattern on the arm of the cable pivot mount. Refer to figures 1 and 4 for an understanding of these holes.

Should it be necessary to change shift direction from right hand to left hand or from pull to push, the neutral safety switch must also be relocated in the opposite position.

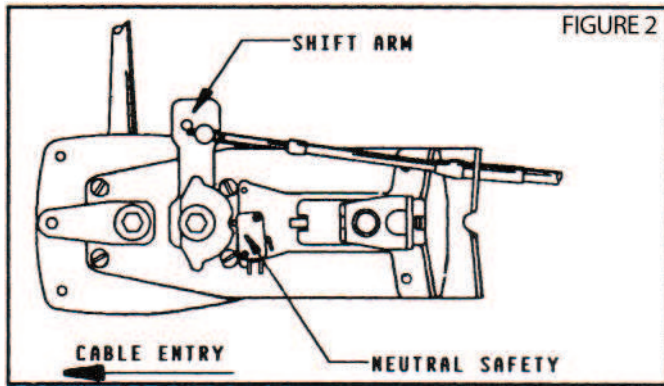
The following figures 1, 2, 3 and 4 show all possible shift positions in which the control may be assembled for horizontal side mounting.

Hand lever may be relocated at any 30 degree increment from right hand to left hand. To do this, the insert behind the hand lever hub must be repositioned so the notch is aligned with the hand lever interlock pawl.

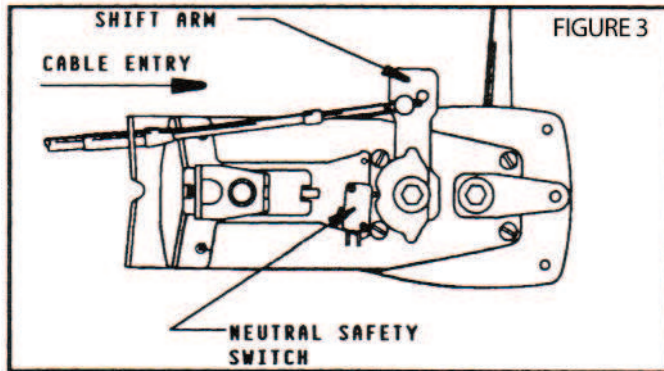


R.H. CABLE FROM REAR-PULL TO GO FORWARD

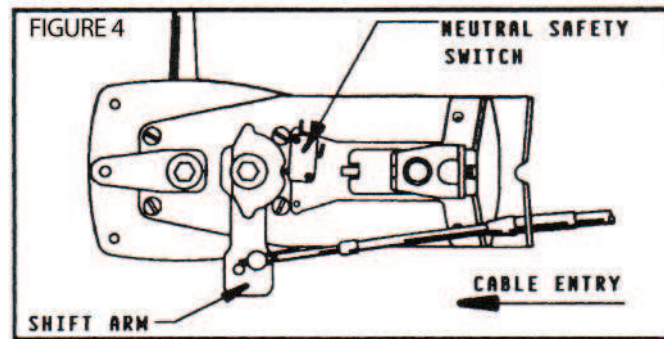
L.H. CABLE FROM FRONT-PUSH TO GO FORWARD



R.H. CABLE FROM FRONT-PULL TO GO FORWARD
L.H. CABLE FROM REAR-PUSH TO GO FORWARD



R.H. CABLE FROM REAR-PUSH TO GO FORWARD
L.H. CABLE FROM FRONT-PULL TO GO FORWARD



R.H. CABLE FROM FRONT-PUSH TO GO FORWARD
L.H. CABLE FROM REAR-PULL TO GO FORWARD

Reversing Throttle Action

⚠ WARNING

Throttle Arm and Dwell Block must both point with cable entry for "Push To Open" or both must point against cable entry for "Pull To Open, as shown in FIGURE 5.

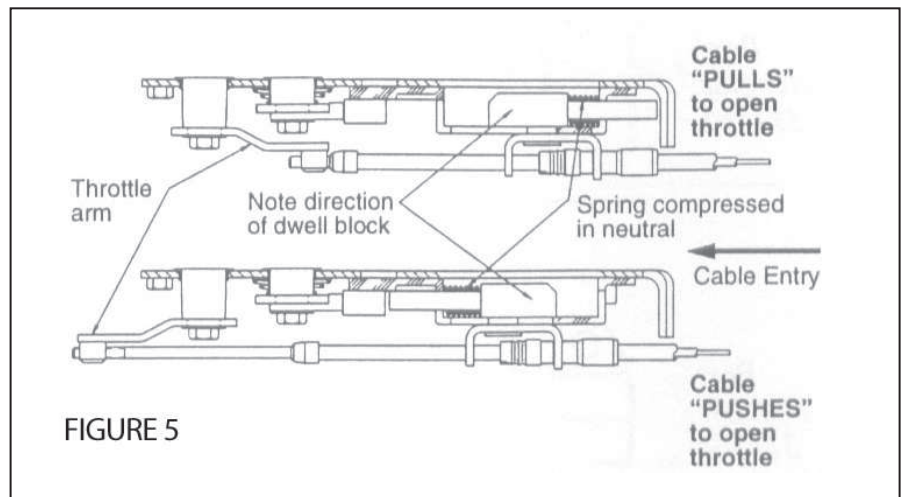
Check the carburetor throttle arm to determine whether Push or Pull is required to open the throttle.

If action is incorrect, reverse throttle arm by unscrewing Hex Head Bolt and large Flat Washer. Remove arm and assemble in opposite position as shown in FIGURE 5.

Also reverse position of Dwell Block and Spring by removing the Round Head Slotted Screw, Flat Washer and Nut. Reassemble in the opposite position as shown in Figure 5.

CAUTION

Should it be necessary to remove the hanger plate from the back of the control, DO NOT remove the two (2) recessed screws which retain the back of the Gear Unit Assembly. Disassembly of the gear unit could result in loss of inner components and incorrect re-assembly.

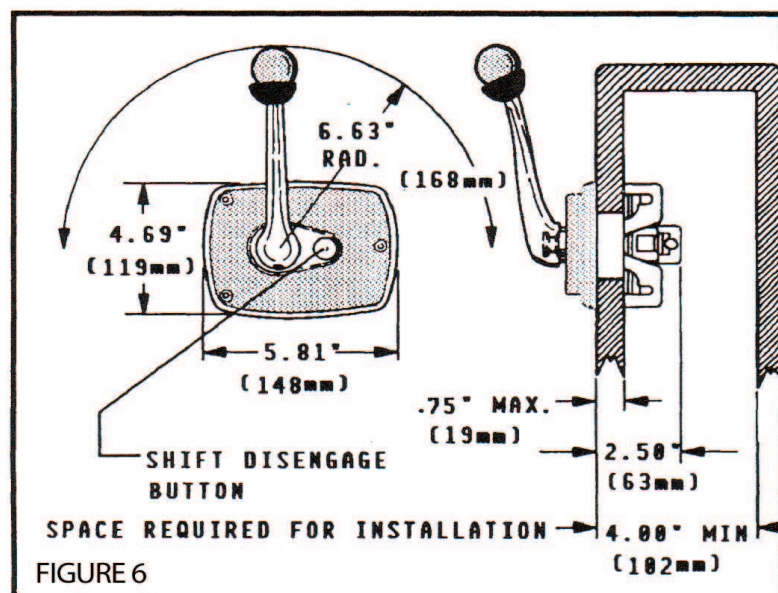
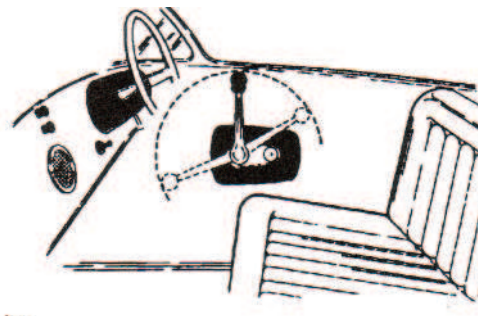


Mounting Location

Choose a mounting location for the control head which will provide comfortable operation of the hand lever, unobstructed movement of mechanism arms and a clear path for cables to engine. Figure 6 shows the control dimensions and the recommended clearance behind the mounting surface.

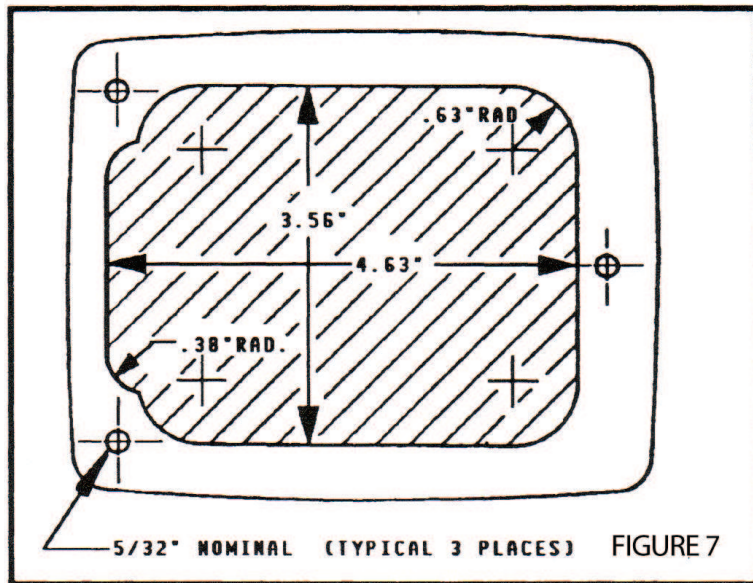
The recommended position for the control head is shown below. The vertical center line of the hand lever should be in line with the front edge of the seat and the hand lever hub should be 2-1/2 inches (63 mm) above the seat.

Using the template provided, cut the appropriate mounting hole in the panel as shown in Figure 7.



NOTICE

Maximum thickness panel is 3/4 inches. Control will install more easily in a 1/2 inch thick panel.



Shift Cable Connection

CAUTION

The pivot must be in the hole nearest the cable entry end of the control. Using the hole in the shift arm farthest away from the cable mounting support will produce unequal shift cable travel between "neutral to forward" and "neutral to reverse," resulting in improper shift action.

NOTICE

The control shift lever and the transmission shift lever must coincide at the forward, neutral and reverse positions. Different makers of transmissions may require different amounts of shift travel. For this reason the control shift lever is provided with two (2) holes for attaching the shift cable. One (1) for standard travel and one for the longest travel (see Figure 8).

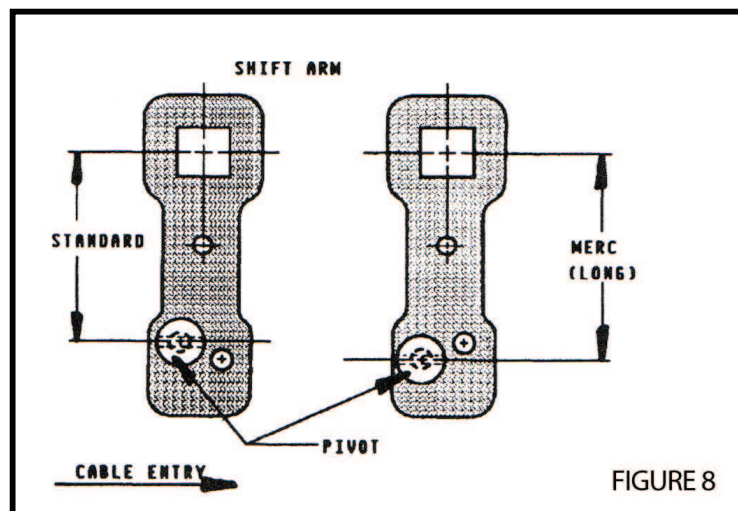
Insert shift cable through opening at rear of hanger assembly in line with the shift arm pivot attachment holes and lock cable anchor groove in the hanger slot.

Screw pivot onto the cable rod, allowing threads to protrude through pivot 1/8 inch for standard travel, or 1/4 inch for long travel.

Lubricate pivot with lithium marine grease, then insert into required hole in shift arm (See Figure 8). Fasten with cotter pin, Tighten cable nut against pivot.

To obtain standard (2-3/4 inch) cable shift travel at the engine, use shift arm on control at short pivot hole location as shown in Figure 8.

For Mercury, long (3 inch) cable shift travel at the engine is necessary. Assemble shift arm to control using longest pivot hole location.



Throttle Cable Connection

With the opening in the swivel bracket nearest to the cable entry end of the control, insert the throttle cable through the opening in the swivel bracket and secure the cable anchor groove in the swivel bracket slot.

Screw the pivot on to cable rod end and allow cable rod threads to protrude through the pivot 3/16 inch minimum.

Lubricate the pinion with lithium marine grease, then insert into the hole in the throttle arm. Fasten with a cotter pin. Tighten cable nut against pivot.

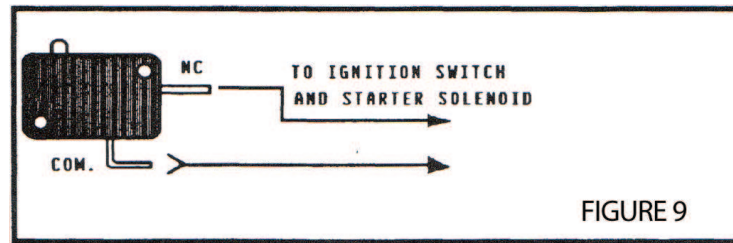
Neutral Safety Switch

⚠ CAUTION

Check to make sure that there is electrical continuity only when the control is in neutral. When the control is in gear, there must not be any electrical continuity.

Connect the neutral start switch between the ignition switch and the starter solenoid as shown in Figure 9.

Use the terminals and insulators provided with the control to insure against an electrical short circuit.



Mounting Control

Run the cables connected to the control back to the throttle and shift locations of the engine and drive.

The cables should run as straight as possible, avoiding any sharp bends. Make no bends in the cable tighter than that specified for the cable style you are using.

Cables should be supported by using cable hangers or running them through straight sections of conduit for extremely long runs.

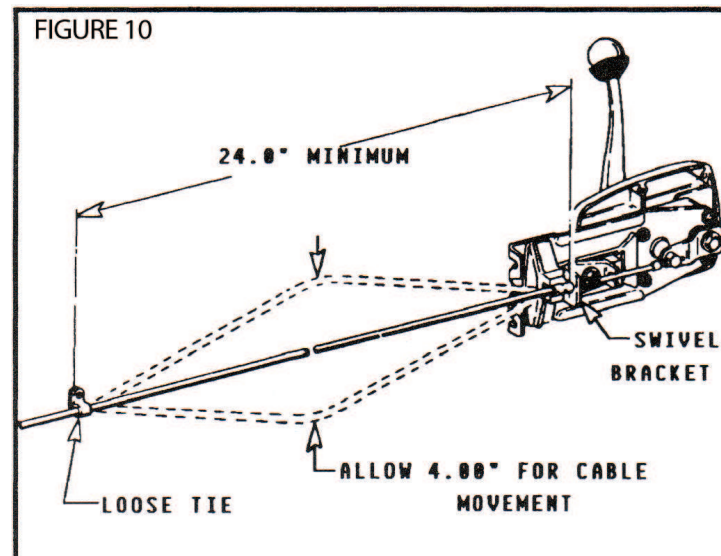
Place hand lever in forward position so that, as a result, the shift arm and throttle arm will take the least amount of space to feed hanger bracket through the panel cutout (See Figure 7).

Fastening recommendation for normal mounting:
3 each oval head #10 x 1-1/4 inch long self tapping screws are furnished.
Optional method:
3 each #1- x 1-1/2 inch long bolts with flat washers and nylock nuts.

⚠ CAUTION

Do not use cable hangers or clamps which may crush or stress the cables in anyway. Doing so may impair the function of the cables.

Do not restrict movement of the throttle cable within 2 feet of the control (see Figure 10). To do so may damage or impair proper operation of throttle cable.



Engine Connection

⚠ CAUTION

Over jamming the transmission stop at either end of the shift travel may 1) cause excessive wear of the drive and shift gear 2) result in a heavy feel of the hand lever and/or 3) over stress and damage the cable.

The throttle cable must be disconnected from the engine before making engine idle adjustments. Adjustment of the engine idle while the throttle cable is still connected to the engine may cause a jamming action against the idle stop. As a result, the control may not function properly and damage to the control cable and/or the engine could result.

Unless the above procedures are followed, engine RPM will raise excessively during the shift cycle.

For this reason there is a compression spring-type throttle dwell built into the cable anchor assembly, which allows the throttle cable action to remain stationary during the shift cycle (See Figure 5).

As a result, the hand lever must be in the forward detent position and the carburetor arm must be at the idle position while connecting the throttle cable to the engine.

The full open throttle position usually varies with the make of the engine. If the throttle travel is less than the full stop position of the control, an effort should be made to limit the hand lever travel by means of a shelf, or a stop of some sort, under the hand lever. Excessive pressure on the hand lever at full open throttle position may cause damage to the control and/or the engine.

Connect the shift and throttle cables to the shift and throttle levers at the engine, following the instructions provided with the appropriate connection kit or with the engine.

Shift cable must connect so that the "FORWARD," "NEUTRAL" and "REVERSE" positions of the control's shift lever will coincide with the forward, neutral and reverse positions of the transmission's lever.

Re-adjust the cable terminal until the correct function of the shift lever is achieved.

Proper adjustment of the shift cable will result in a much better operation of the control.

For **Throttle cable** connection, adjust the engine to a smooth idle as recommended by the engine manufacturer. This must be done BEFORE connecting the control throttle cable to the carburetor or governor arm.

Place the hand lever of the control into the forward detent position.

Place the carburetor arm slightly against the idle stop.

Adjust the throttle cable terminal (at the engine end) to line up with the hole on the carburetor arm.

Proper adjustment of the throttle cables will assure having a long life from this control. When the throttle cable is correctly adjusted, the engine speed will remain at idle while the control is shifted, and will increase only when the hand lever is moved beyond the shift detent.

Preliminary Check

NOTICE

To operate the hand lever, it is necessary to lift the collar, under the ball knob, upward to disengage the Neutral Interlock.

CAUTION

Do not force shift when the engine is not running. To do so may damage the control, the cables and/or the engine, especially outboards and stern drives.

WARNING

Do not shift too quickly from forward to reverse. Stay in the idle position or neutral, until the boat has lost most of its headway before completing the shift action to reverse.

Check to make sure there is no interference with either the hand lever or the control mechanism movement.

Place the control handle lever in the Neutral position, then grasp the button next to the hand lever hub. Pull out the button (Approximately 0.20 inches) to DIS-ENGAGE shift (See figure 6).

Move the hand lever through the forward range to operate the carburetor throttle lever to full open position. When the hand lever is returned to the neutral position, the button must be pushed back in so that the shift gear is re-engaged and the control may be operated in both shift and throttle range.

For starting or warmup, place the control in the Neutral detent position, then grasp the button beside the hand lever and pull out to dis-engage shift. Lift collar under hand lever knob and move hand lever beyond shift detent to advance throttle for neutral warmup.

When warmup is completed, return hand lever to neutral detent position, then push button back in, to re-engage the shift. The control is ready for shift and throttle operation.

When operating the control, always lift the collar under the knob to release the hand lever from neutral.

Move hand lever "crisply" from neutral into forward or reverse. When the throttle cable is correctly adjusted, the engine speed will remain at idle, and will advance only when the hand lever moves beyond the shift detent.

Maintenance

NOTICE

Periodically is a time frame which depends upon the actual usage of the boat. For a boat used only a few weekends in the summer, periodically could mean annually. For a boat used continually day after day all year, periodically could mean monthly or even weekly.

For Maximum protection, especially in saltwater areas, wipe all metallic parts such as screw heads and cable sleeves with light oil or light marine grease.

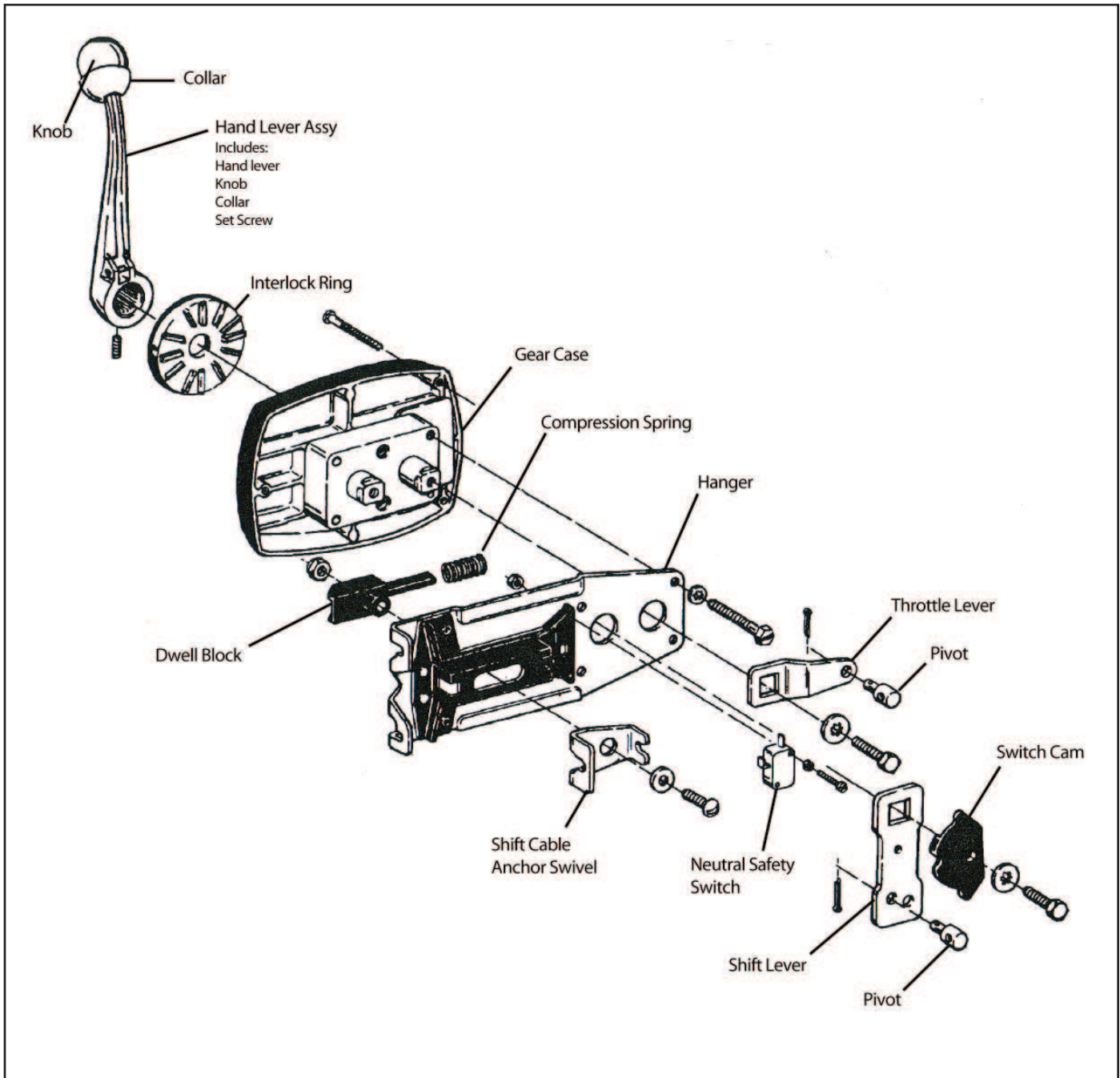
The chrome plated hand lever should be washed with fresh water and waxed regularly.

Periodically check the control mechanism for loose fastenings and signs of wear on moving parts, particularly the cable terminals. Lubricate all moving parts with a good quality lithium marine grease.

Periodically examine the cables and engine connections for signs of physical damage, wear and/or corrosion. Replace all faulty or damaged cables as required.

Periodically check the neutral safety switch for proper electrical function.

Periodically check the wiring for abrasion which may cause a short circuit.



Replacement Kits

Hand Lever Assembly, Complete with knob and Set screw #306494

Interlock Ring #307365

Ball Knob Set - One Red, One black - #CA68287

Neutral Safety Switch Kit #300928

Pivot Kit- 2 Pivots - 3300 Series Cable #306083

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