

TILLER HANDLE KIT, P/N 5007127, 5007578 INSTALLATION INSTRUCTIONS

APPLICATION



Use this instruction sheet when installing the above tiller handle kit on **Evinrude® E-TEC™** outboards, **40 – 60 HP**. DO NOT install on any other models.



SAFETY INFORMATION

For safety reasons, this kit should be installed by an authorized *Evinrude®/Johnson®* dealer. This instruction sheet is not a substitute for work experience. Additional helpful information may be found in other service literature for your engine.

This instruction sheet uses the following signal words identifying important safety messages.

	DANGER	
Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.		

	WARNING	
Indicates a potentially hazardous situation which, if not avoided, CAN result in severe injury or death.		

	CAUTION	
Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate personal injury or property damage. It also may be used to alert against unsafe practices.		

IMPORTANT: Identifies information that will help prevent damage to machinery and appears next to information that controls correct assembly and operation of the product.

These safety alert signal words mean:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

Always follow common shop safety practices. If you have not had training related to common shop safety practices, you should do so to protect yourself, as well as the people around you.

It is understood that this instruction sheet may be translated into other languages. In the event of any discrepancy, the English version shall prevail.

DO NOT do any repairs until you have read the instructions and checked the pictures relating to the repairs.

Be careful, and never rush or guess a service procedure. Human error is caused by many factors: carelessness, fatigue, overload, preoccupation, unfamiliarity with the product, and drugs and alcohol use, to name a few. Damage to a boat and outboard can be fixed in a short period of time, but injury or death has a lasting effect.

When replacement parts are required, use *Evinrude/Johnson Genuine Parts* or parts with equivalent characteristics, including type, strength and material. Using substandard parts could result in injury or product malfunction.

Torque wrench tightening specifications must be strictly followed. Replace any locking fastener (locknut or patch screw) if its locking feature becomes weak. Definite resistance to turning must be felt when reusing a locking fastener. If replacement is specified or required because the locking fastener has become weak, use only authorized *Evinrude/Johnson Genuine Parts*.

If you use procedures or service tools that are not recommended in this instruction sheet, YOU ALONE must decide if your actions might injure people or damage the outboard.

TO THE INSTALLER: Give this sheet and the operating instructions to the owner. Advise the owner of any special operation or maintenance information contained in the instructions.

TO THE OWNER: Save these instructions in your owner's kit. This sheet contains information important to the future use and maintenance of your engine.



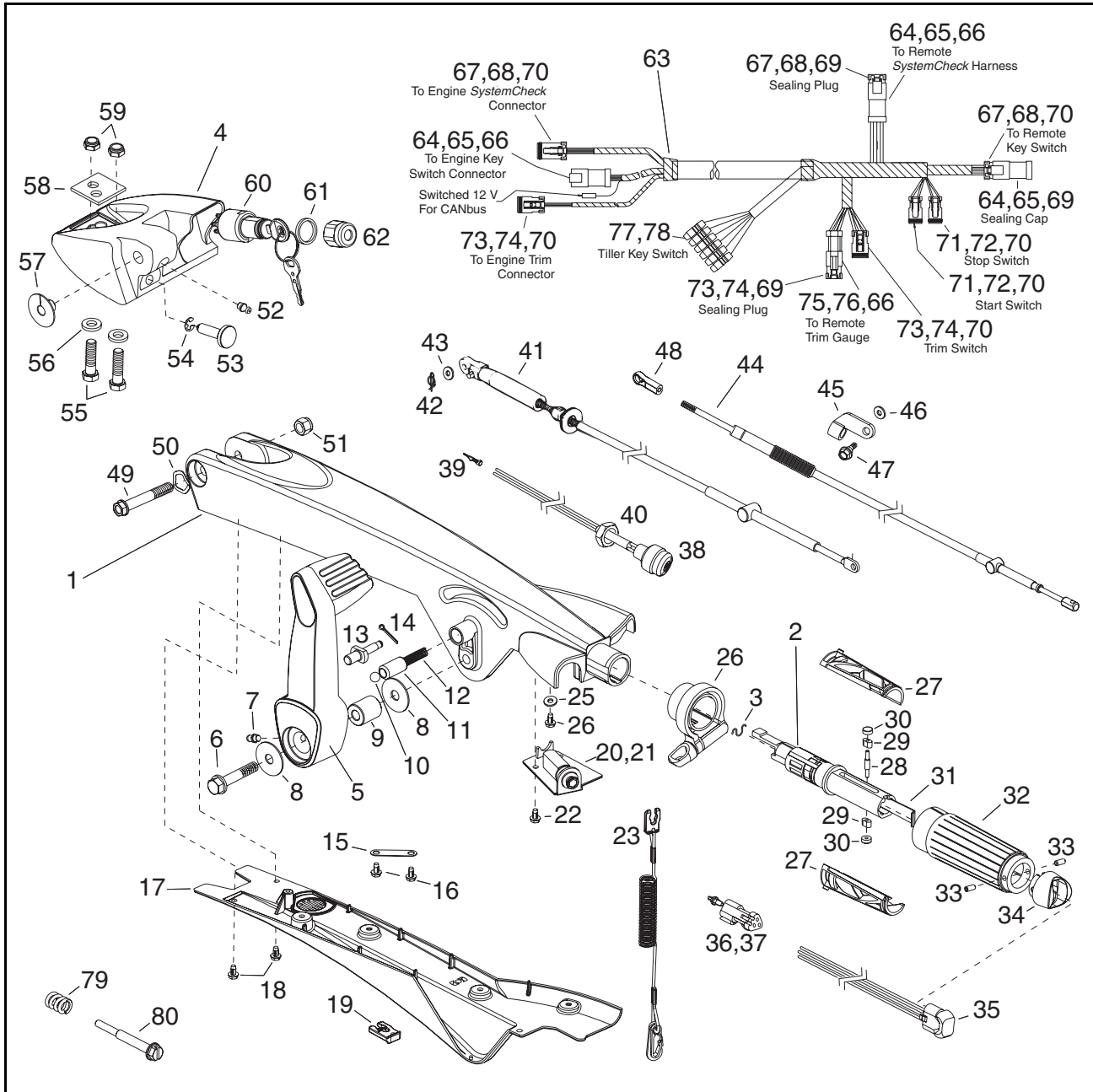


WARNING



Do not install this kit unless you have the ability to communicate with the engine using *Evinrude E-TEC* Diagnostics Software. Complete installation of this kit requires reprogramming the Engine Management Module (EMM) to provide start-in-gear protection.

TILLER CONVERSION KIT (*Evinrude E-TEC* 40 – 60 HP)



5007127 BLUE
5007578 WHITE

TILLER CONVERSION KIT

Ref	P/N	Name of Part	Qty	Ref	P/N	Name of Part	Qty
1	N/A	STEERING HANDLE	1	42	333774	RETAINER CLIP	1
2	329878	STEERING HANDLE, Inner	1	43	328702	WASHER	1
3	332089	*RETAINER CLIP	1	44	5006159	CABLE, Throttle	1
4	N/A	BRACKET, Steering handle	1	45	334083	ANCHOR, Throttle cable	1
5	352673	HANDLE, Shift	1	46	328739	WASHER, Anchor to bracket	1
6	329885	SCREW, Shift handle mount	1	47	329160	SCREW, Anchor to bracket	1
7	313607	LUBE FITTING	1	48	334153	CONNECTOR, Throttle cable	1
8	327400	WASHER, Shift handle	2	49	350989	SCREW, Steering handle to bracket	1
9	334815	BUSHING, Shift handle	1	50	328733	WASHER, Spring	1
10	318626	BALL	1	51	307160	LOCKNUT, Steering handle screw	1
11	327178	GUIDE	1	52	313607	LUBE FITTING	1
12	309247	SPRING	1	53	352295	THUMBSCREW, Height adjustment	1
13	351932	PIN, Shift handle to cable	1	54	203470	RETAINER CLIP	1
14	303049	COTTER PIN	1	55	325729	SCREW, Bracket to steering arm	2
15	351995	RETAINER, Shift cable	1	56	320397	WASHER	2
16	336481	SCREW, Retainer	2	57	325452	BUSHING, Steering handle to brkt.	2
17	352293	COVER, Steering Handle	1	58	352625	PLATE, Angle adjustment	1
18	336481	SCREW, Cover	7	59	315077	NUT, Steering bracket	2
19	333499	CLIP, Emergency stop	1	60	5005800	SWITCH, Ignition & key assy	1
20	586936	STOP SWITCH Assy	1	61	127251	SPACER	1
21	514679	*PIN, Terminal	6	62	127237	NUT, Keyswitch	1
NS	514696	CONNECTOR, 2 pin receptacle	1	63	586934	HARNESS, Tiller handle	1
NS	514697	LOCKWEDGE, 2 pin receptacle	1	64	514688	*CONNECTOR, 6 pin receptacle	3
22	336481	SCREW, Stop switch	3	65	514684	*LOCKWEDGE	3
23	398602	CLIP & LANYARD Assy	1	66	514679	*PIN, Terminal	15
24	336481	SCREW, Inner handle retaining	1	67	514687	*CONNECTOR, 6 Socket plug	3
25	121497	WASHER	1	68	514683	*LOCKWEDGE	3
26	174741	THROTTLE FRICTION CONTROL	1	69	514690	*SEAL PLUG	15
27	339722	HELIX, Twist grip	2	70	514680	*SOCKET, Terminal	22
28	329880	PIN	1	71	176295	*CONNECTOR, 2 Socket plug	2
29	329879	GUIDE	2	72	127287	*LOCKWEDGE	2
30	329881	ROLLER, Helix to cable	2	73	514685	*CONNECTOR, 3 Socket plug	3
31	352104	GUIDE, Wire	1	74	514681	*LOCKWEDGE	3
32	352813	TWIST GRIP, Assy	1	75	514686	*CONNECTOR, 3 Pin receptacle	1
33	324967	SCREW	2	76	514682	*LOCKWEDGE	1
34	352103	HOUSING, Trim switch	1	77	910446	*SOCKET, Terminal	6
35	352270	SWITCH, Trim & Tilt	1	78	126908	*SEAL PLUG	6
36	514686	CONNECTOR, Trim & Tilt	1	79	551113	SPRING, Steering friction	1
37	514682	LOCKWEDGE, 3 pin receptacle	1	80	332945	SCREW, Steering friction	1
38	586935	START SWITCH Assy	1	NS	335299	DECAL, Emergency stop clip	1
39	514679	*PIN, Terminal	2	NS	333978	DECAL, Start warning (blue)	1
NS	514696	CONNECTOR, 2 pin receptacle	1	NS	333979	DECAL, Gear shift (blue)	1
NS	514697	LOCKWEDGE, 2 pin receptacle	1	NS	320107	TIE STRAP	15
40	327805	NUT, Start switch	1	NS	317893	TIE STRAP	2
41	5006160	CABLE, Shift	1				

NS Not Shown



WARNING



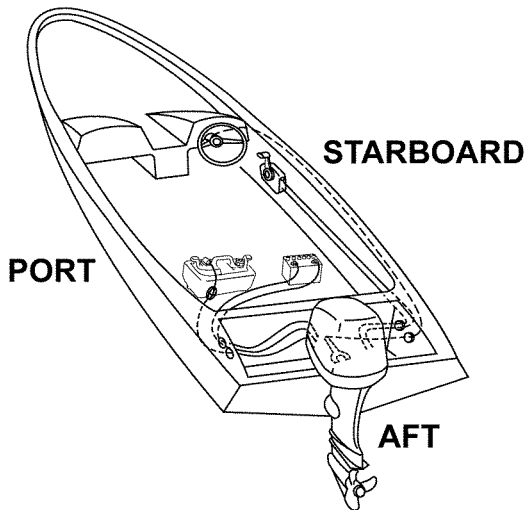
Improper installation of this kit could result in personal injury due to loss of boat control.

A boat designed for remote steering might have a lower maximum rated horsepower for a tiller-steered outboard than shown on the certification plate. To avoid overpowering a boat designed and rated for remote steering, contact boat manufacturer for tiller-steered maximum rated horsepower.

To prevent accidental starting while servicing, disconnect battery leads from battery. Twist and remove all spark plug leads.

To prevent injury from contact with a rotating propeller, remove propeller before servicing and when running outboard on a flushing device.

FORWARD



Nautical Orientation

INSPECTION

Before installation, check boat for obstructions that could interfere with free movement of tiller handle when steering or tilting outboard.



CAUTION



To avoid damaging the tiller handle when tilting the outboard up, position the outboard to clear obstacles in the motor well and boat.

INSTALLATION

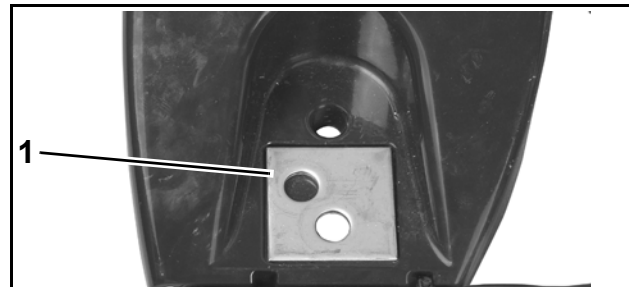
IMPORTANT: An optional MWS harness may be added to this tiller kit to allow installation of remote *SystemCheck* gauges or trim control. Before installing tiller on outboard, refer to **OPTIONAL MODULAR WIRING SYSTEM (MWS) HARNESS INSTALLATION** on p. 9.

Disconnect the battery cables at the battery.

Remove any screws from steering arm holes. Make sure all paint or locking material is cleaned from threads.

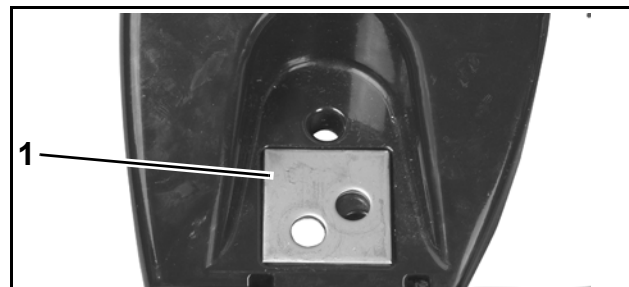
Place angle adjustment plate in pocket of steering arm bracket.

The steering arm can be positioned straight, or angled 15° port or starboard by moving the adjustment plate.



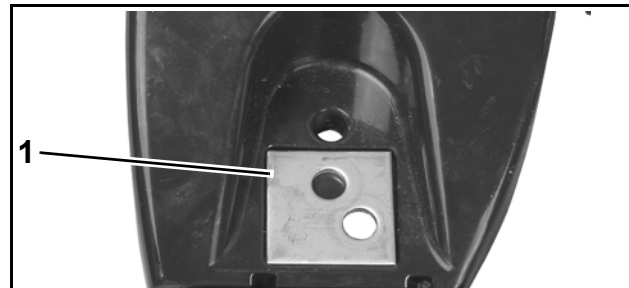
1. Plate adjustment for tiller in CENTER position.

005083



1. Plate adjustment for tiller in PORT position.

005084

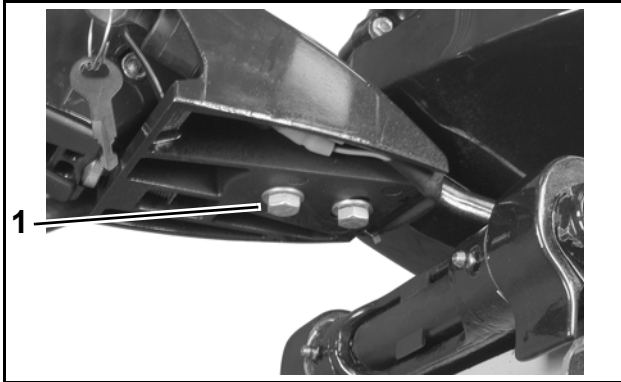


1. Plate adjustment for tiller in STARBOARD position.

005085

Insert steering arm screws, with washers, through plate and bracket.

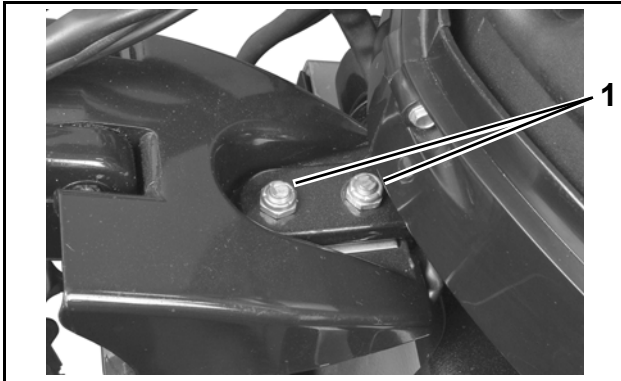
Place tiller bracket on steering arm from the bottom. Thread steering arm screws into steering arm and tighten to a torque of 18 to 20 ft. lbs. (25 to 27 N-m).



1. Steering arm screws and washers 006361

IMPORTANT: Be sure that wires are not pinched.

Install locknuts on screws on top of steering arm. Hold screws with a wrench and tighten locknuts to 18 to 20 ft. lbs. (25 to 27 N-m).

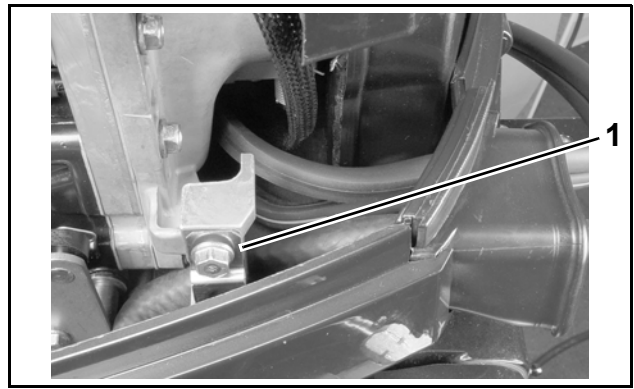


1. Locknuts 006362

CONTROL CABLE INSTALLATION

IMPORTANT: DO NOT complete final attachment of cables to shift and throttle levers until all cables, wires, and hoses have been routed and grommet has been placed into the lower engine cover.

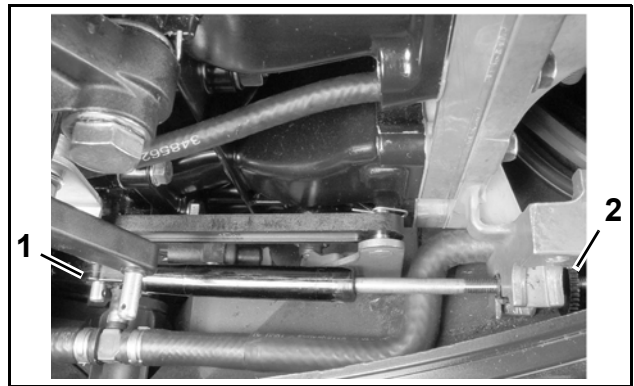
Remove cable retainer from anchor block.



1. Cable retainer 002099

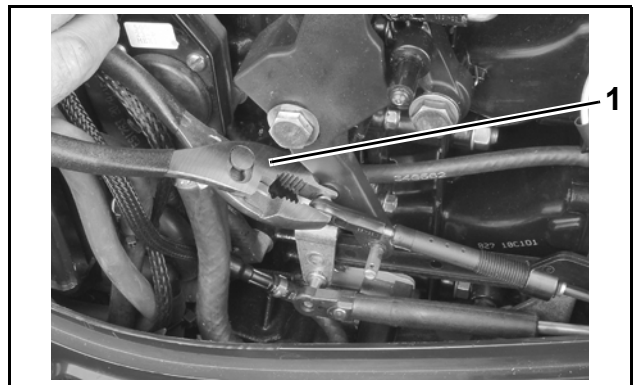
Remove grommet from lower engine cover and insert shift cable through opening.

Pull firmly on shift cable casing to remove backlash. With outboard and tiller handle shift lever in NEUTRAL, place the cable trunnion into the lower anchor pocket. Adjust the trunnion nut so the casing fits onto the shift lever pin.



1. Shift lever pin
2. Trunnion nut 002100

Use Ball Socket Installer tool, P/N 342225, to snap throttle cable connector onto throttle cam pin. (Use Remover tool, P/N 342226, to remove cable.)



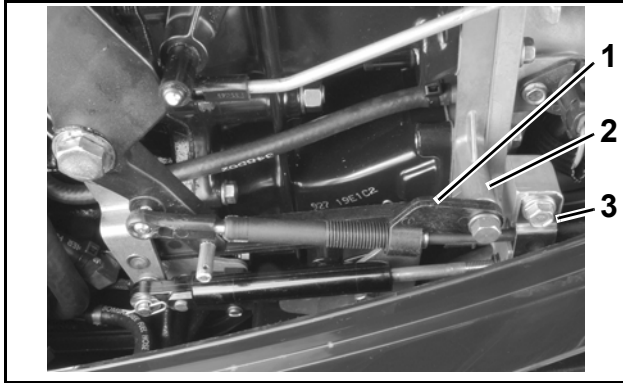
1. Installer tool 005106

Place throttle cable in upper anchor pocket. Install cable retainer on anchor block.

Hold twist grip in full SLOW position. Pull firmly on cable to remove backlash.

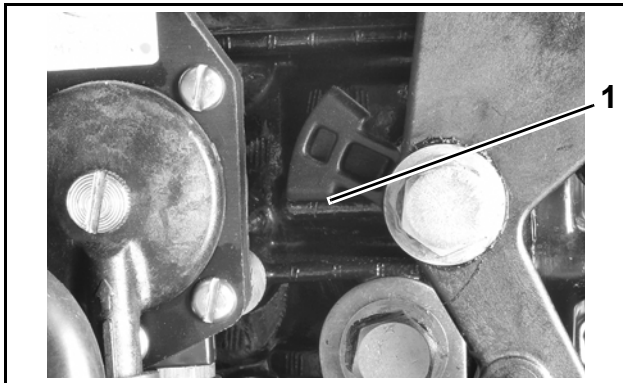
Adjust cable anchor so throttle cam is against idle stop when anchor screw aligns with throttle body boss. Then, rotate anchor four turns toward the end of the cable.

Install washer, cable anchor, and cable anchor screw on throttle body boss. Tighten screw securely.



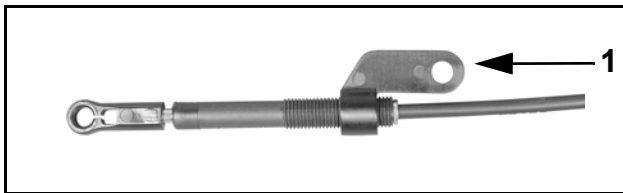
1. Cable anchor
2. Boss
3. Cable retainer

006312



1. Idle stop

005114

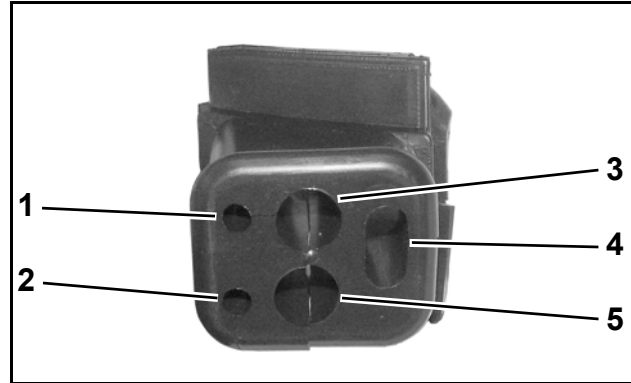


1. Turn anchor four turns toward cable end.

006564

IMPORTANT: Rotate twist grip. Make sure throttle cam goes to full throttle without overloading cable, and still returns to IDLE stop.

Apply soapy water to the inside surfaces of grommet and install cables and fuel line as shown:

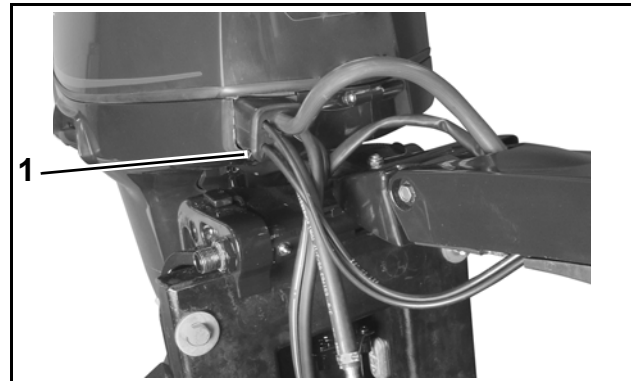


1. Throttle cable
2. Shift cable
3. Wiring harness
4. Battery cable
5. Fuel line

001998

Place the grommet into position in the lower motor cover.

When grommet is in place and all cables have been installed, tighten a tie strap, P/N 500081, around the outside of the grommet to form a seal around the cables.

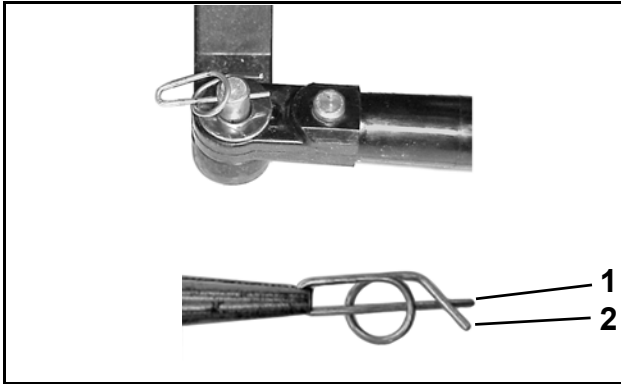


1. Tie strap

006563

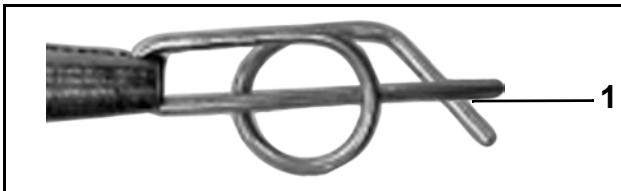
Secure shift cable to the shift lever pin. For proper installation, review the following steps:

- Place washer on pin.
- Position retainer clip with straight section on the bottom and angled section on the top.
- Use long nose pliers to insert straight section of clip into linkage pin hole.



1. Straight section DP0818
2. Angled section DP0817

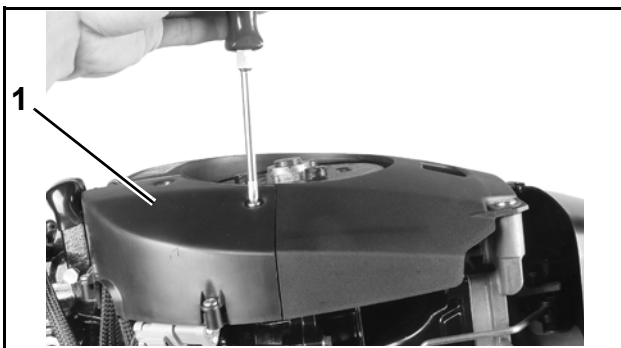
- Push the clip towards the hole while lifting on the curved end with the pliers.
- Be sure retainer clip fully engages the pin.
- Lock the retainer by moving the angled section **behind** the straight section.



Locked Retainer Clip DP0817a
1. Angled section behind straight section

ELECTRICAL CONNECTIONS

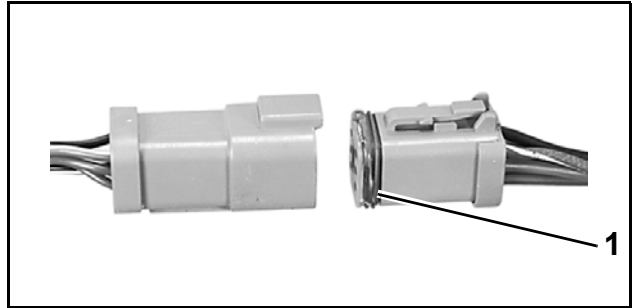
Remove electrical cover.



1. Electrical cover 002421

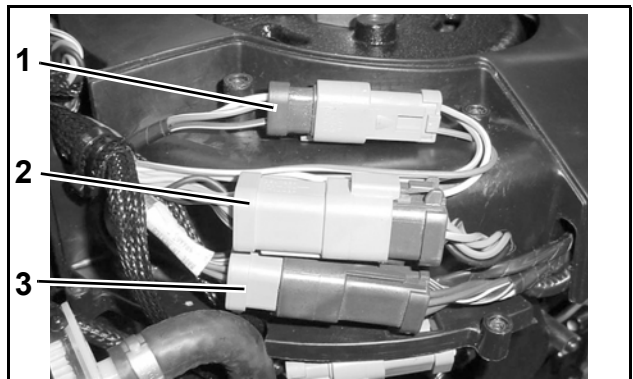
Route wiring harness from tiller handle through channel in flywheel cover.

Apply *Electrical Grease* to connector seals, then connect tiller handle wiring harness to engine harness.



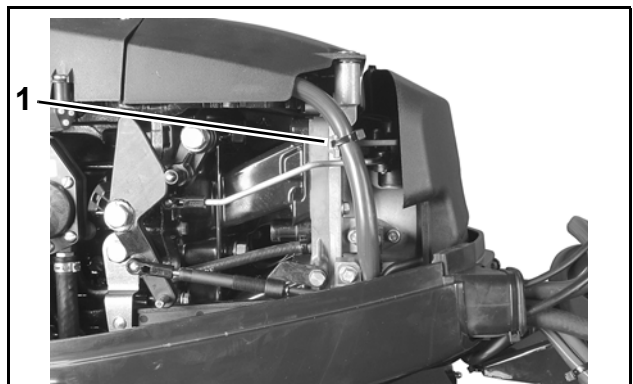
1. Seal 42079a

Arrange connectors in flywheel cover, as shown, and install electrical cover.



1. Trim and tilt harness 00199a
2. SystemCheck™ connector
3. Start/stop harness

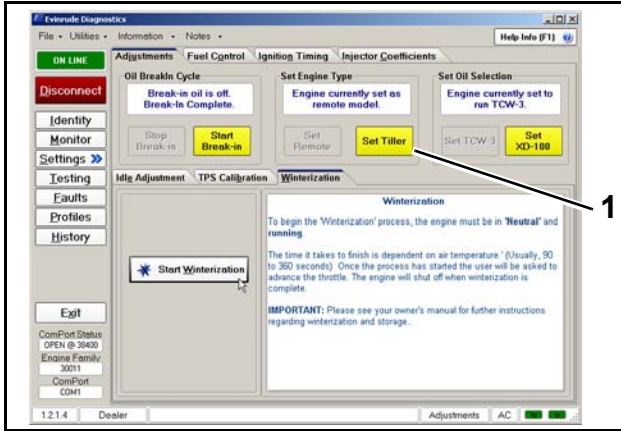
Use tie strap to secure harness to throttle body bracket.



1. Bracket 006314

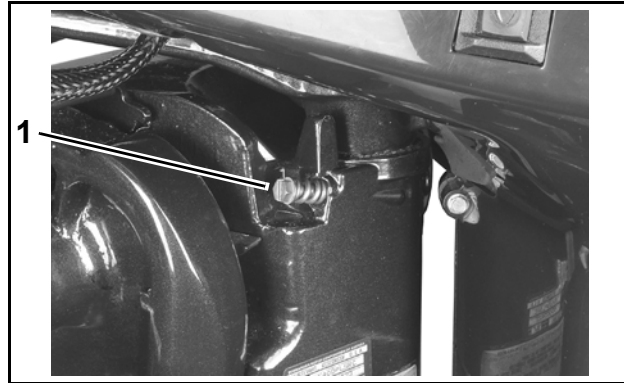
IMPORTANT: Route and secure all wires to avoid contact with moving parts.

Use *Evinrude E-TEC* Diagnostics Software to reprogram Engine Management Module (EMM) for Tiller Model start-in-gear protection.



1. Tiller mode setting

006306



1. Steering friction screw

005117

Steer outboard from side to side. Adjust steering friction screw until steering effort is comfortably stiff with only slight drag.

⚠ WARNING ⚠

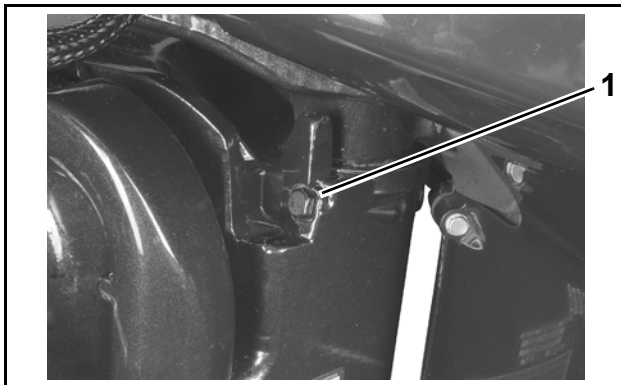
Dealer must use *Evinrude E-TEC* Diagnostics Software to reprogram Engine Management Module (EMM) to provide start-in-gear protection. Failure to provide start-in-gear protection could create a risk of personal injury or property damage.

⚠ WARNING ⚠

Steering friction device is not intended to hold boat on a set course. **DO NOT** overtighten steering friction screw for “hands-off” steering. Reduced control of the boat could result in loss of control by the operator, creating a risk of personal injury or property damage.

STEERING FRICTION

Remove plug from port side of swivel bracket.



1. Plug

005116

Apply *Triple-Guard*[®] grease to threads of steering friction adjustment screw. Install spring and screw.

CHECK INSTALLATION

Make sure the following operate properly before returning outboard to customer:

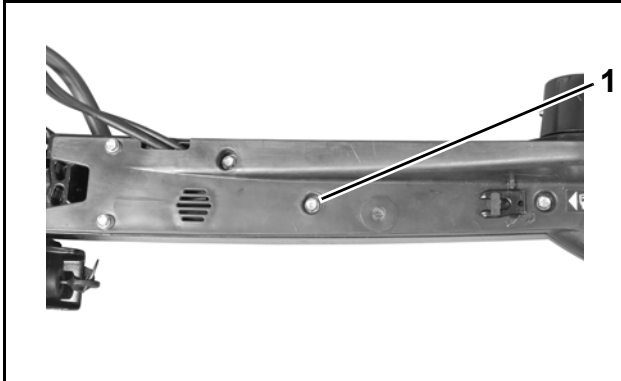
- Engine stop circuit
- Emergency stop switch and lanyard
- Steering movement and friction control
- Throttle control (IDLE to WIDE OPEN)
- Shift control and proper gear engagement
- Start-in-gear protection
- Trim and tilt control

⚠ WARNING ⚠

Only shift outboard with throttle in **IDLE** position. If outboard is shifted into gear with throttle setting above IDLE speed, the boat could accelerate suddenly, injuring boat occupants and bystanders.

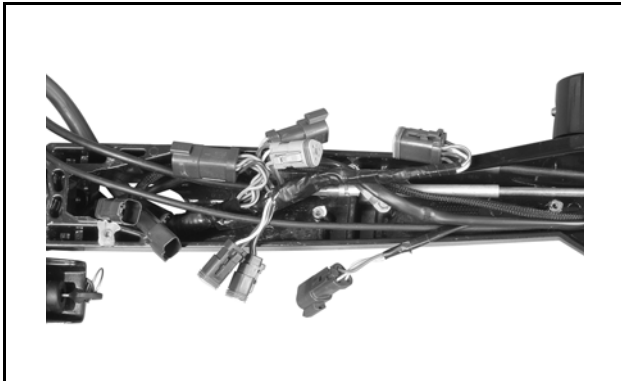
OPTIONAL MODULAR WIRING SYSTEM (MWS) HARNESS INSTALLATION

Remove seven screws and bottom cover of tiller handle.



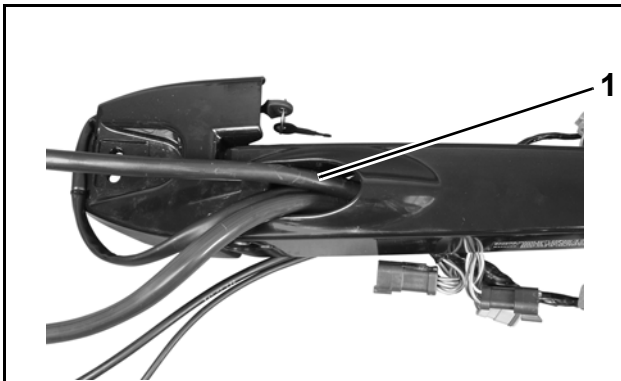
1. Cover screw 006566

Remove tie straps, disconnect tiller handle wiring harness connections, and remove sealing caps.



006567

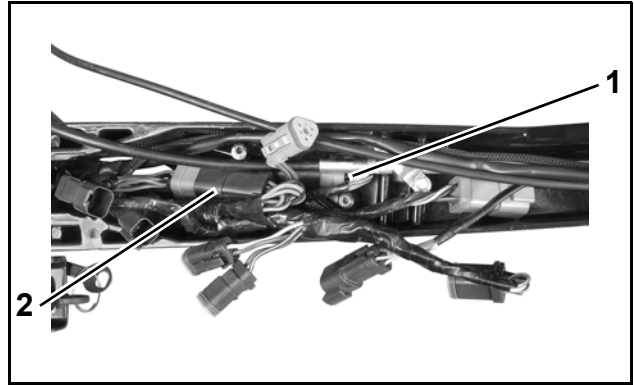
Insert MWS Harness through the top of the tiller handle, to the port side of the existing cables.



1. MWS Harness 006568

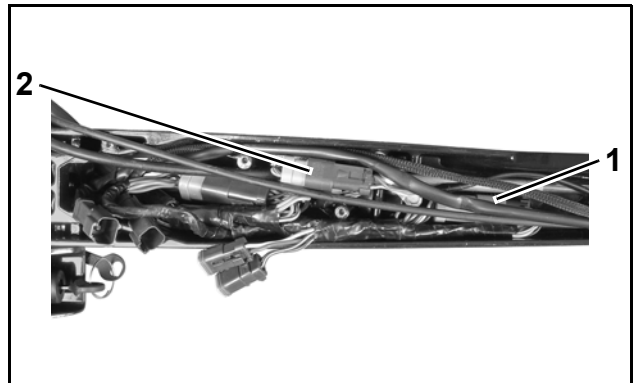
Install harness trim/tilt and *SystemCheck* connectors. First, place trim/tilt connector under

shift cable. Then, place *SystemCheck* connector into handle as shown.



1. Trim/Tilt connector 006569
2. SystemCheck connector

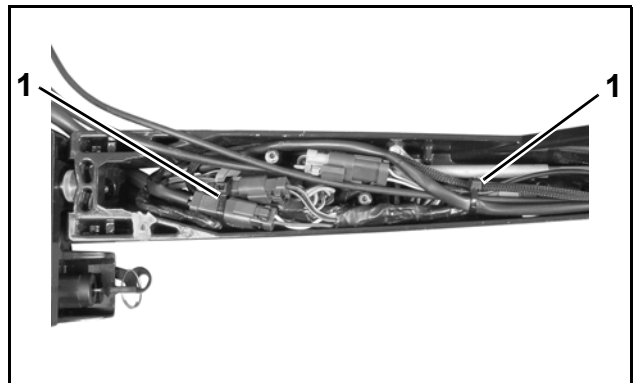
Install harness key switch connector and tiller handle trim/tilt connector. Place connectors as shown.



1. Harness key switch connector 006570
2. Tiller handle trim/tilt connector

Install tiller handle stop switch connector and start button connector.

Route cables and install tie straps as shown. Make sure that wiring cannot interfere with moving parts of shift cable.



1. Tie straps 006571

Install bottom cover. Tighten screws 24 to 36 in. lbs (2.7 to 2.9 N·m).

OPERATING INSTRUCTIONS

IMPORTANT: Store these instructions onboard the boat with the operator's guide.

SAFETY INFORMATION

! DANGER !

DO NOT run the engine indoors or without adequate ventilation or permit exhaust fumes to accumulate in confined areas. Engine exhaust contains carbon monoxide which, if inhaled, can cause serious brain damage or death.

Contact with a rotating propeller is likely to result in serious injury or death. Assure the engine and prop area is clear of people and objects before starting engine or operating boat. Do not allow anyone near a propeller, even when the engine is off. Blades can be sharp and the propeller can continue to turn even after the engine is off. Always shut off the engine when near people in the water.

! WARNING !

The engine cover is a machinery guard. **DO NOT** operate your outboard with the cover off unless you are performing maintenance or emergency starting, and then be careful to keep hands, hair, and clothing clear of all moving parts. Contact with moving parts could cause injury.

Always shut off the outboard when your boat is near people who are in the water.

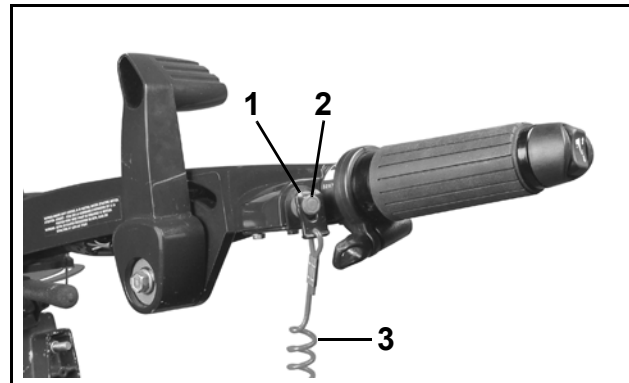
Be familiar with the waters you are operating in. The gearcase of this outboard extends below the water surface and could potentially come in contact with underwater obstructions. Contact with underwater obstructions may result in loss of control and personal injury.

ENGINE STARTING

Refer to the **Routine Inspection Checklist** in the *Evinrude E-TEC Operator's Guide* for pre-launch checks before using your outboard.

You **MUST** supply water to the engine before starting. Engine damage can occur quickly.

Connect the clip to the emergency stop switch. Snap the lanyard to a **secure** place on the operator's clothing or life vest — not where it might tear away instead of activating the stop switch.



1. Clip
2. Emergency stop switch
3. Lanyard

005099

IMPORTANT: The operator should always use the clip and lanyard anytime the engine is running.

! WARNING !

Always use the safety lanyard when operating your boat to help prevent a runaway boat and reduce the risk of personal injury or death.

Avoid knocking or pulling the clip off the stop switch during normal boating. The resulting unexpected loss of forward motion can throw occupants forward, causing injury.

Your emergency stop switch can be effective only when in good working condition. At each outing, inspect clip and lanyard for cuts, breaks, or wear. Replace worn or damaged parts.

Keep the lanyard free from obstructions and entanglements.



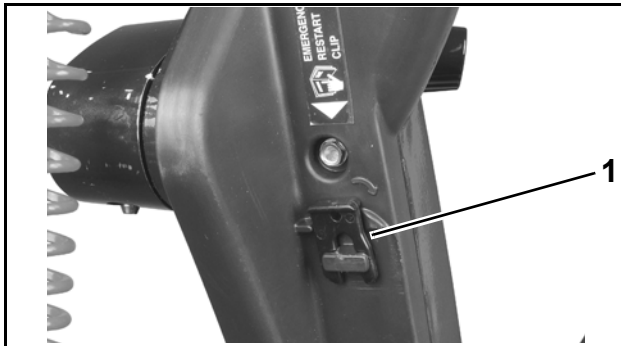
WARNING



At each outing, test the system's operation. With the engine running, remove the clip from the switch by pulling the lanyard. If the engine does not stop running, see your Dealer.

If clip and lanyard should be lost overboard, a spare clip can be found on the bottom of the tiller handle.

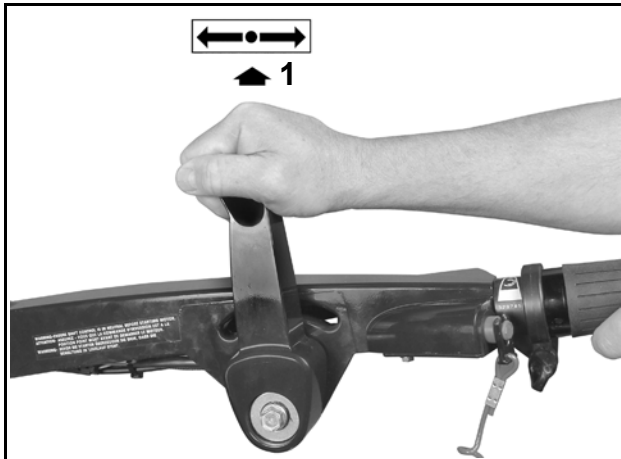
IMPORTANT: Spare clip is for emergency use only. Clip with lanyard should always be attached to operator during normal operation.



1. Spare emergency clip

005105

Move the shift lever to NEUTRAL. Refer to **Shifting and Speed Control**.



1. NEUTRAL

005100

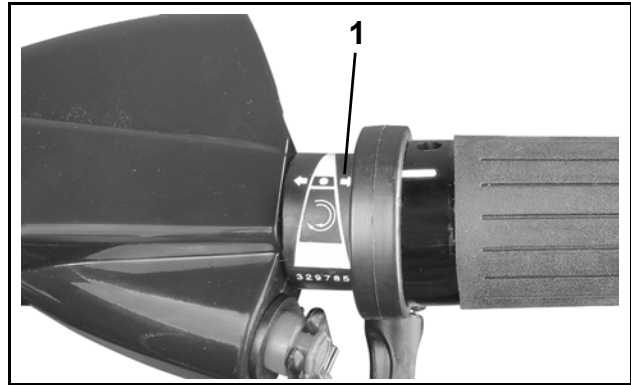


WARNING



Always shift to NEUTRAL before starting the outboard to prevent sudden boat movement, which can cause injury.

Twist throttle grip to slowest IDLE position. Refer to **Speed Control**.



1. SHIFT position

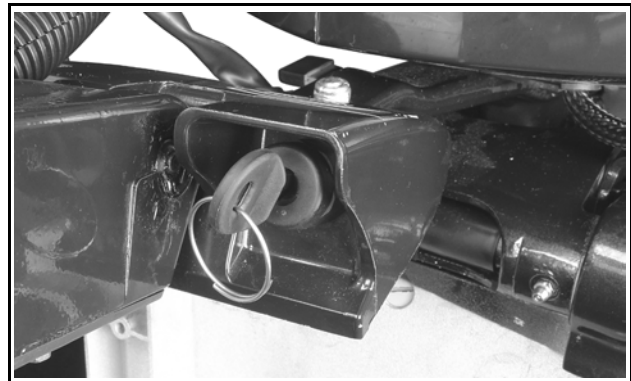
005101

DO NOT advance the throttle before start-up. Advancing the throttle overrides the electronic idle control system. After the engine starts, the engine management module (EMM) will automatically increase idle speed slightly. Idle speed will decrease as the engine warms up.

If the outboard is started at wide open throttle, twist the throttle grip back to IDLE before shifting.

Key Switch

While seated, turn the key switch fully clockwise to the START position. Crank the engine no longer than 20 seconds.



005118

IMPORTANT: The starter motor can be damaged if operated **continuously** for more than 20 seconds.

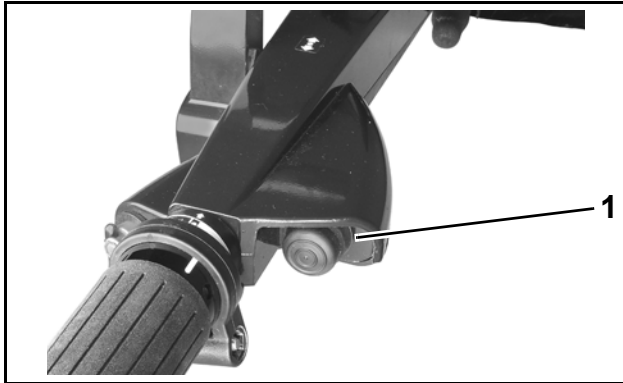
Upon start-up, release the key.

If the engine did not start, release the key momentarily, then try again.

IMPORTANT: Engine will not start if outboard is in gear.

Start Button

While seated, press the start button. (Key switch must be in the ON position.) Crank the engine no longer than 20 seconds.



1. Start button
2. NEUTRAL

005104

IMPORTANT: The starter motor can be damaged if operated **continuously** for more than 20 seconds.

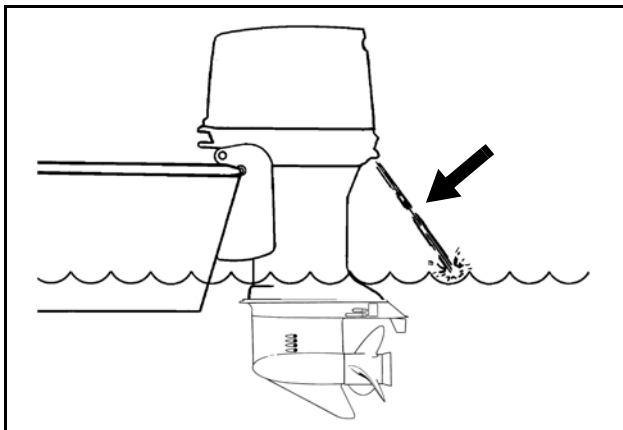
Upon start-up, release the start button.

If the engine did not start, release the start button momentarily, then try again.

IMPORTANT: Engine will not start if outboard is in gear, if lanyard is not in place, or if key switch is in OFF position.

After Engine Starts

Check the water pump indicator. A steady stream of water indicates the water pump is working. If a steady stream of water from the water pump indicator is not visible, stop the engine. Refer to **Engine Overheating** in the *Evinrude E-TEC Operator's Guide*.



Water Pump Indicator

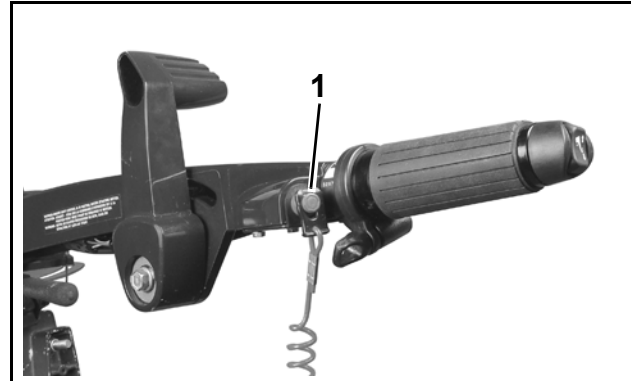
drc4952a

ENGINE STOPPING

Twist the throttle grip to IDLE position.

Move shift lever to NEUTRAL.

Outboard may be stopped by turning the key switch to the OFF position, or by pressing the STOP button until the outboard stops running.



1. STOP button

005099

IMPORTANT: Be sure to turn key OFF when outboard is not in use to avoid discharging the battery.

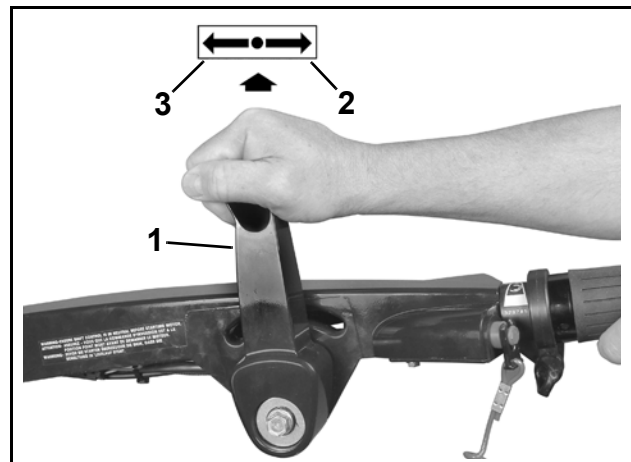
SHIFTING AND SPEED CONTROL

IMPORTANT: Carefully check the function of all control and engine systems before leaving the dock. **DO NOT** shift the outboard into FORWARD or REVERSE while it is shut OFF.

Shifting

With engine running, twist the throttle grip to IDLE position.

Move the shift lever briskly and decisively to FORWARD or REVERSE.



1. Shift lever
2. FORWARD
3. REVERSE

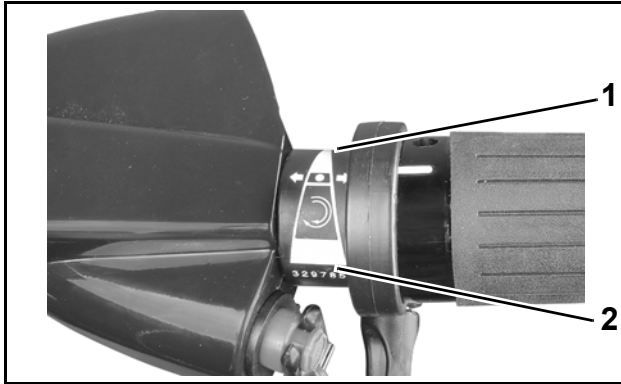
005100

IMPORTANT: When shifting from FORWARD to REVERSE or from REVERSE to FORWARD, pause at NEUTRAL until the engine is at idle speed and the boat has slowed.

Speed Control

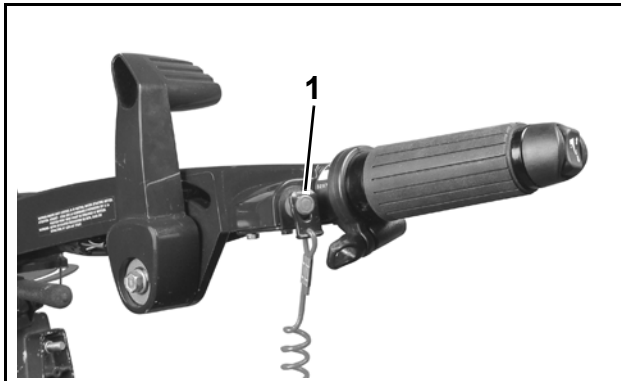
With the outboard running, twist throttle grip:

- Clockwise to decrease speed; or
- Counterclockwise to increase speed.



1. Decrease speed
2. Increase speed
005101

Tiller is equipped with a throttle friction adjustment knob. Tighten the knob to reduce the effort required to hold a throttle setting.



1. Throttle friction knob
005099



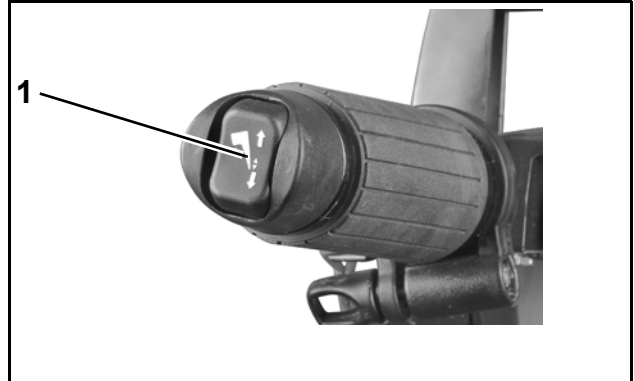
WARNING



Tighten knob only enough to hold throttle at a constant engine speed. Overtightening will prevent quick throttle change in case of emergency.

TRIM CONTROL

Tiller includes a handle mounted trim/tilt switch.



1. Trim/tilt switch
005107



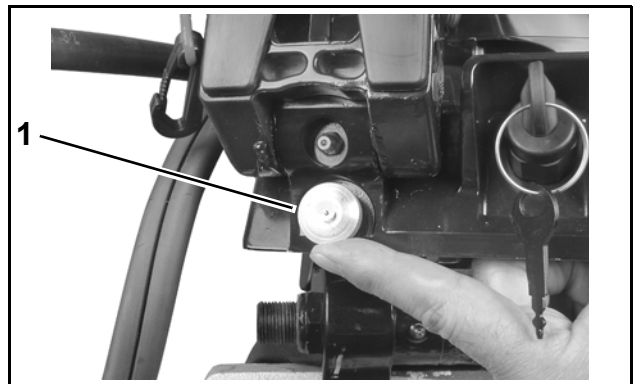
CAUTION



If tiller kit is installed on a manual tilt outboard, DO NOT use tiller as a lever to help tilt the outboard. Damage can result.

TILLER HEIGHT

The angle of the tiller handle can be raised or lowered by adjusting a thumbscrew under the handle.



1. Height adjustment screw
005108

STORAGE (WINTERIZATION)

You can winterize your outboard either in the water or on a trailer. DO NOT start the outboard once winterization is completed.

In the Water

Prepare your outboard for the off-season by following these steps:

- 1) Make sure that the throttle is in NEUTRAL and the water intake screens are completely submerged.
 - 2) Add 2+4[®] Fuel Conditioner to the fuel tank and fill it with fuel.
 - 3) Advance the throttle to 1/2 throttle position and start the outboard. The outboard will run at idle speed.
 - 4) After approximately 15 seconds, move the throttle to IDLE position. Run the outboard at idle for another 15 seconds, then advance the throttle again to 1/2 throttle position.
 - 5) The outboard will automatically go to fast idle and fog itself. Allow the outboard to run until it shuts itself off (about one minute).
 - 6) Top off the oil reservoir and inspect the fuel filter. If there is debris in the fuel filter, it must be replaced.
- IMPORTANT:** When finished, leave the outboard in a vertical position long enough to completely drain the water from the powerhead.
- 7) If equipped, disconnect the speedometer pickup at the upper connection and blow all water out of the hose using air pressure of 25 psi (172 kPa) or less. Reconnect the speedometer pickup after all of the water has been removed.

On a Trailer

 WARNING 
To prevent injury from contact with rotating propeller, remove the propeller before servicing and when running the outboard with a flushing device.

Prepare your outboard for the off-season by following these steps:

- 1) Make sure that the throttle is in NEUTRAL. Remove the propeller.
 - 2) Add 2+4[®] Fuel Conditioner to the fuel tank and fill it with fuel.
 - 3) Attach a garden hose to the flushing port and turn on the water.
 - 4) Advance the throttle to 1/2 throttle position and start the outboard. The outboard will run at idle speed.
 - 5) After approximately 15 seconds, move the throttle to IDLE position. Run the outboard at idle for another 15 seconds, then advance the throttle again to 1/2 throttle position.
 - 6) The outboard will automatically go to fast idle and fog itself. Allow the outboard to run until it shuts itself off (about one minute).
 - 7) After the outboard shuts itself off, detach garden hose.
 - 8) Top off the oil reservoir and inspect the fuel filter. If there is debris in the fuel filter, it must be replaced.
 - 9) Apply the recommended lubricant to the propeller shaft splines, then install the propeller.
- IMPORTANT:** When finished, leave the outboard in a vertical position long enough to completely drain the water from the powerhead.
- 10) If equipped, disconnect the speedometer pickup at the upper connection and blow all water out of the hose using air pressure of 25 psi (172 kPa) or less. Reconnect the speedometer pickup after all of the water has been removed.

When using this winterization procedure, engine oil may appear on the skeg below the gearcase area. **This is normal.** Avoid potential oil stains by placing a shop towel or suitable container under the propeller and skeg for the duration of the storage.