

Installation Instructions

Digital Trim Instrument Kit

(P/N 3858773-9)

Digital Trim Instrument Kit for Flybridge

(P/N 3860248-0)

Safety Considerations

These instructions will alert you to certain things you should do very carefully. If you don't, you could

- hurt yourself or bystanders
- hurt the boat operator or bystanders
- damage the machinery

Safety symbols appear next to information important to prevent you and others from being hurt.

The Note symbol, **Note**, appears next to information important to keep machinery from being damaged.

IMPORTANT: The safeguards and instructions appearing in these instructions cannot cover all possible conditions or situations that occur. The person following these directions must use common sense, caution, and care.

Product Reference and Illustration

When reference is made to a brand name, product, or specific tool, an equivalent product may be used in place of the referred to product. Substitute products used must have equivalent characteristics, including type, strength, and material. Incorrect substitution may result in product malfunction and possible injury to the operator and/or passengers.

All photographs and illustrations used may not necessarily depict actual models or equipment, but are intended only for reference. Specifications used are based on the latest product information available at the time of publication.

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INTRODUCTION

This installation instruction covers Volvo Penta equipment manufactured by Volvo Penta to be used on Volvo Penta products. Any use other than those specified in these instructions may give unpredictable results.

Proper preparation is extremely helpful for efficient service work. A clean work area at the start of the job will minimize tools and parts becoming misplaced. Obtain tools, instruments, and parts needed for the job before work is started. Interrupting a job to locate special tools or repair kits is a needless delay.

Service Policy

Whether within or following the warranty period, Volvo Penta has a constant interest in its products.

It is Volvo Penta's policy to provide dealers with service knowledge so they can give professional service demanded by today's consumer. The Volvo Penta service schools, frequent mailing of service bulletins, letters and promotions, special tools, and these instructions represent Volvo Penta's efforts in giving consumers the best and most prompt service possible. If a service question does not appear to be answered in these instructions, you are invited to call, write, or e-mail the Volvo Penta Service Department for additional help. Always be sure to give complete information, including engine model and serial number.

Be sure you are familiar with Volvo Penta's warranty. If you have any questions, call, write, or e-mail the Volvo Penta Service Department. If other than genuine Volvo Penta parts and components are used, Volvo Penta may refuse subsequent warranty claims involving that engine.

When a brand-name product or specific tool is specified, another item may be used. However, the substitute must have equivalent characteristics, including type, strength, and material. You must determine if incorrect substitution could result in product malfunction and personal injury to anyone. To avoid hazards, equivalent products which are used must meet all U.S. Coast Guard Safety Regulations and ABYC standards.

References, Illustrations and Specifications

Volvo Penta reserves the right to make changes at anytime, without notice, to specifications, models, and procedures. Also, the right to change any specifications or parts at any time without incurring any obligation to equip same models manufactured prior to date of such change. All information, illustrations, and specifications contained in these instructions are based on the latest information available at the time of printing. The right is reserved to make changes at any time without notice.

Photographs and illustrations used in this instruction may not depict actual models or equipment. The continuing accuracy of this installation instruction cannot be guaranteed.

Use the general torque specification for all fasteners unless otherwise specified in the instructions.

IMPORTANT SAFETY NOTICES

Carefully observe the safety alert symbols below for dangers, warnings, and cautions. They alert installers and operators of possible dangers or important information contained in this manual.

HOWEVER: Warnings alone do not eliminate hazards, nor are they a substitute for safe boat handling and proper accident prevention measures!

DANGER

Failure to comply with a danger symbol will result in serious injury or death to boat operator, boat occupants, and/or others.

WARNING

Failure to comply with a warning may result in injury or death to boat operator, boat occupants and/or others.

CAUTION

Failure to comply with a caution may result in failure or damage to the equipment.

IMPORTANT

Special attention should be used to prevent incorrect assembly or disassembly.

Kit 3858773-9 Purpose

This kit is used to install a new digital trim instrument.

Kit Contents

Item	Qty
Digital trim instrument	1
Front ring	1
Box	1

Kit 3860248-8 Purpose

This kit is used to install a new flybridge digital trim instrument.

Kit Contents

Item	Qty
Digital trim instrument kit (3858772-1)	1
Cable kit	1
Relay	2
T-cable harness	1

Assembly

1. Making the hole for the trim instrument

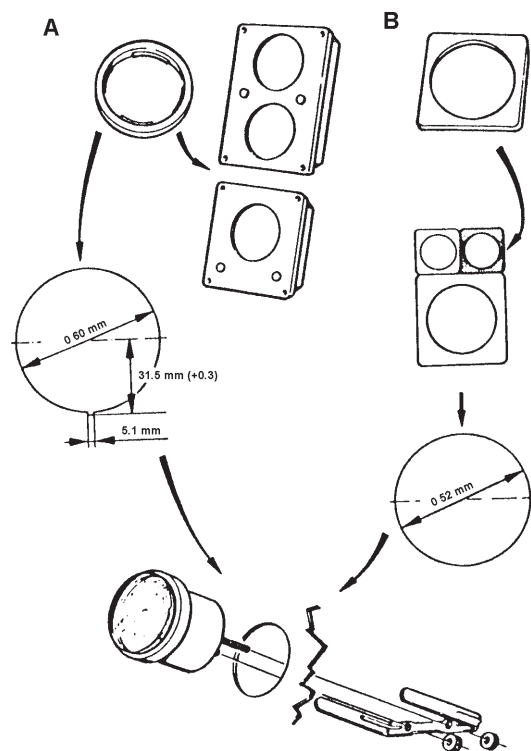


Figure 1

2. Installing the instrument

- a. "A" is a ring to use when installing the instrument in a bulkhead or in an accessory panel.

Note: A guide slot, 5.1 mm (0.2 in.) wide and 1.5 mm (0.06 in.) deep must be filed in the lower edge of the hole. Applies to 60 mm (2.4 in.) hole. See figure 1.

- b. "B" is the square frame for installing separately or together with other instruments in an existing panel.

Note: For option B, the hole must be 52 mm (2.0 in.) in diameter. Make sure that there is ample room for the instrument and cabling.

Fasten the ring or the square frame to the instrument panel. Fit the accessory panel (where applicable) and fasten the instrument using the U-shaped yoke and the two knurled nuts.

- c. The trim instrument is always supplied set for DP-S (see figure 2). It is set to a trim limit of 5° and the switch is sealed with the switch (see DP-S circle) in position A.

Note: The switch cannot be set to position B for DP-S drives. The seal must not be broken.

However, when the trim instrument is supplied with SX drives, the seal must be broken and the switch set to position B. (See the SX circle.) The trim limit is 12° in this position.

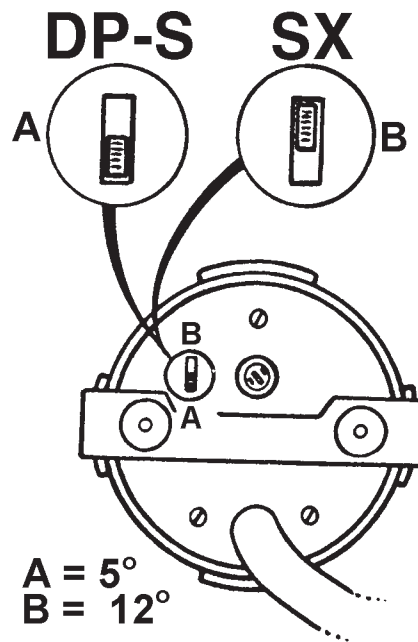


Figure 2

3. Checking the trim figure

- Turn the key switch to the ignition position (the lamp comes on).
- Trim the drive down to the 0° position. Press switch (see “A,” figure 3).
- To ensure the drive is in the 0° position, use either method 1 or 2.

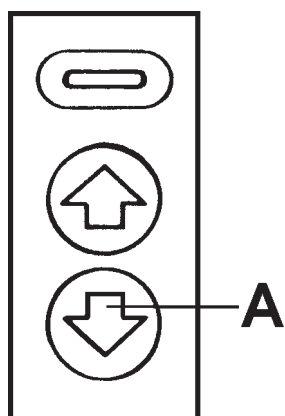


Figure 3

4. Method 1: Determining Trim/Tilt Zero (Transom Angle Unknown)

Note: To determine the transom angle, hold a carpenter's square along the flat portion of the

boat's bottom and bring in the square until the end contacts the transom. Read the measurement at the intersection of the hull bottom and the transom. Each ¼-inch of measurement equals 1 degree of transom angle.

- After determining the boat's transom angle, move the drive to the 0° position by extending or retracting the drive until the trim/tilt cylinders are at the proper measurement for zero (0), as shown in table 1 under the correct transom angle column.
- Once zero is established, “sight-in” the drive and boat bottom (as shown in figure 4) to verify accuracy. If the anti-ventilation plate and boat bottom do not appear parallel, use Method 2 to zero out the drive.
- Using the measurements given in table 1, measure the trim cylinder extension to position the drive at the proper angles as required to set up the trim limiter.

5. Method 2 : Determining Trim/Tilt Zero (Transom Angle Known)

- Make sure the electrical system is properly connected, then restore electrical power to the boat's electrical system.
- IMPORTANT:** Place the boat on a secure cradle, trailer, or other approved boat holding device. Adjust the drive unit so that the anti-ventilation plate is parallel to the boat's bottom (refer to figure 4). Use a straight edge along the

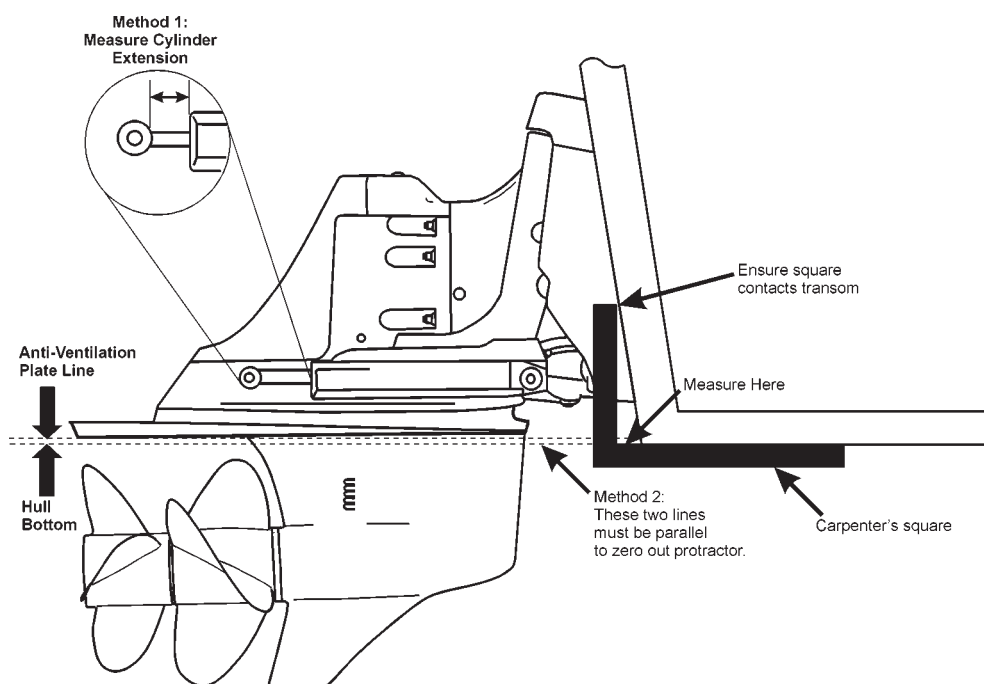


Figure 4

	Transom Angle						Trim Ram Dimension		
	15°	14°	13°	12°	11°	10°	Inches (Decimal)	Inches (Fraction)	Metric (cm)
Trim Degree	-9	-8	-7	-6	-5	-4	2.12	2 ⁷ / ₆₄	5.39
	-8	-7	-6	-5	-4	-3	2.29	2 ¹ / ₄	5.82
	-7	-6	-5	-4	-3	-2	2.43	2 ²⁷ / ₆₄	6.18
	-6	-5	-4	-3	-2	-1	2.58	2 ³⁷ / ₆₄	6.56
	-5	-4	-3	-2	-1	0	2.75	2 ³ / ₄	6.99
	-4	-3	-2	-1	0	1	2.90	2 ⁵⁷ / ₆₄	7.37
	-3	-2	-1	0	1	2	3.05	3 ³ / ₆₄	7.75
	-2	-1	0	1	2	3	3.19	3 ³ / ₁₆	8.11
	-1	0	1	2	3	4	3.35	3 ¹¹ / ₃₂	8.51
	0	1	2	3	4	5	3.49	3 ³¹ / ₆₄	8.87
	1	2	3	4	5	6	3.62	3 ⁵ / ₈	9.20
	2	3	4	5	6	7	3.80	3 ⁵¹ / ₆₄	9.66
	3	4	5	6	7	8	3.96	3 ⁶¹ / ₆₄	10.06
	4	5	6	7	8	9	4.11	4 ⁷ / ₆₄	10.44
	5	6	7	8	9	10	4.26	4 ¹⁶ / ₆₄	10.83
	6	7	8	9	10	11	4.43	4 ²⁷ / ₆₄	11.26
	7	8	9	10	11	12	4.60	4 ³⁹ / ₆₄	11.69
	8	9	10	11	12	13	4.76	4 ³ / ₄	12.10

SX Trim Range

DP-S Trim Range

boat's bottom to aid in determining these lines. On a few boats, there may be a slight hook designed into the hull near the transom. Disregard this hook and use the keel line over its greatest length to determine the exact bottom or keel line. Once both lines are determined to be parallel, zero out a universal level protractor or resettable electronic level along the boat's bottom or keel line. Recheck the underside of the anti-ventilation plate line with either level to ensure the reading is zero or adjust the drive to zero as necessary.

6. If any figure other than 0° is shown, turn the potentiometer "C" at the back of the instrument (see figure 5) until the correct figure is shown.

b. If you cannot obtain the correct figure in the instrument, check the trim sender.

c. Remove the trim sender and rotate it until the correct reading appears on the trim gauge. Reinstall the trim sender and adjust for the correct reading.

Service Note: If replacing an existing gauge 3857370 or trim sending unit with this kit, Method 1 or 2 must be used to recalibrate the trim gauge.

Figure 5

7

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