

Installation Instructions

Transom Plate Adaptor

250-290 conversion to SX

P/N 3851718-1

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 boat operator or bystanders
- damage the machinery

Safety symbol,  , appears next to information important to prevent you and others from being hurt.

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

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

Product Reference & Illustration

When reference is being 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.

**VOLVO
PENTA**

Adaptor Plate Installation

This Adaptor Plate is designed to enable Volvo Penta 250-290 style power packages to be repowered with Volvo Penta's new SX style power packages.

The SX transom shield has an "industry standard" transom cutout. This adaptor requires only minor drilling and cutting for installation. In most cases, there is no need to remanufacture the transom.

Contents of Adaptor Plate Kit

<u>Description</u>	<u>Qty.</u>
Transom Shield (with studs and seal strip).	1
Lock nuts	8
Fiat washers	8
Grease fitting, 45°	1
Installation Template	1
Installation Instructions	1

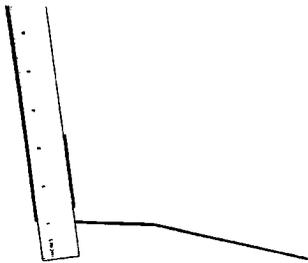


Figure 1

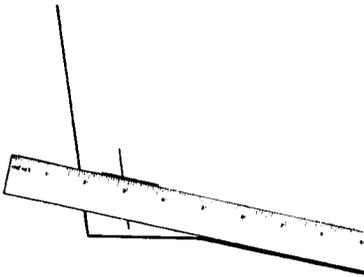


Figure 2

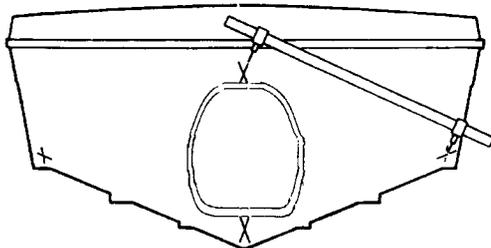


Figure 3

Preparation

Prior to installation it is necessary to check the X-dimension of the early style installation. This step must be done to assure the adaptor plate will cover the early style transom cutout.

IMPORTANT If the original Volvo Penta package was installed at a very high or low X-dimension, there is a possibility that the adaptor plate will not cover the original transom cutout when install at the recommended X-dimension for SX models. If it is determined that the adaptor plate will not cover the original cutout, the transom must be remanufactured.

Locate the Transom Center-line

Draw a line parallel to the boat side at the port and starboard chines (see figure 1).

Draw an intersecting line parallel to the boat bottom at the port and starboard chines. Lightly mark the intersection points. These points will be the centers of arcs drawn to find the transom Center-line (see figure 2).

NOTE The transom center-line is most accurately found by using a beam compass. A workable beam compass can be made by clamping a pivot pin and a pencil to a bar (see figure 3).

Strike an arc at the top of the transom from one chine point and an intersecting arc from the other chine point without changing the beam compass length. Use the same procedure to locate the lower transom center point (see figure 4).

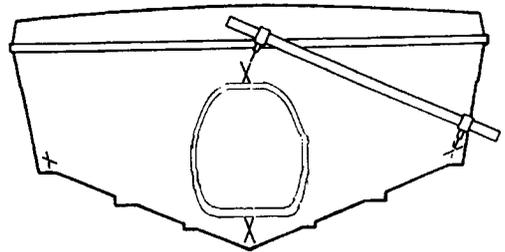


Figure 4

If the boat bottom has a shallow vee, a lower center point may be found by measuring across the transom from chine point to chine point and marking the midpoint on the transom (see figure 5).

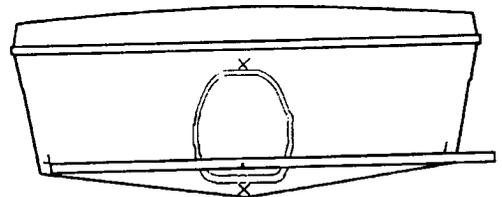


Figure 5

Draw a straight vertical line through the upper and lower center points. This transom center-line will be used to locate the center-line for the adaptor plate mounting template (see figure 6).

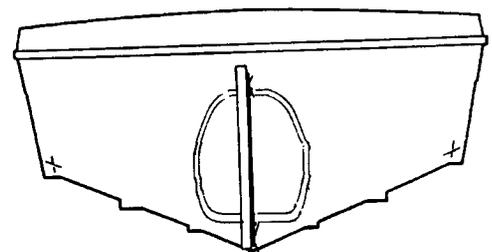


Figure 6

Measure the boat's transom angle with a machinist's protractor or universal plumb and level protractor. These are common tools and can be obtained locally. Record the angle. Measure the transom thickness to be sure it is within the allowable transom thickness range.

NOTE The maximum transom thickness is 57mm [2 1/4 inches] (see figure 7).

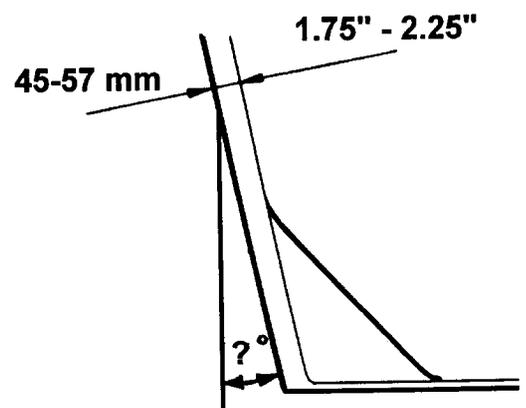


Figure 7

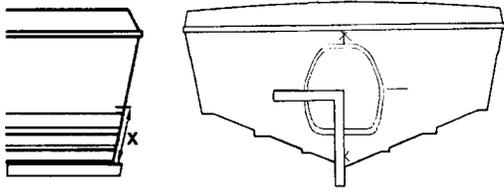


Figure 8

Determine the X-dimension from the chart on the mounting template based on the measured transom angle.

NOTE Do Not use an X-dimension less than 340mm [13 $\frac{3}{8}$ inches].

Place a straight edge along the boat bottom at the vertical center-line. Using a carpenter's square, measure the X-dimension (selected from the installation template) from the top of the straight edge up the transom. Follow the transom angle to get an accurate measurement. Mark the port and starboard sides of the transom cutout. These marks will be used to position the installation template (see figure 8).

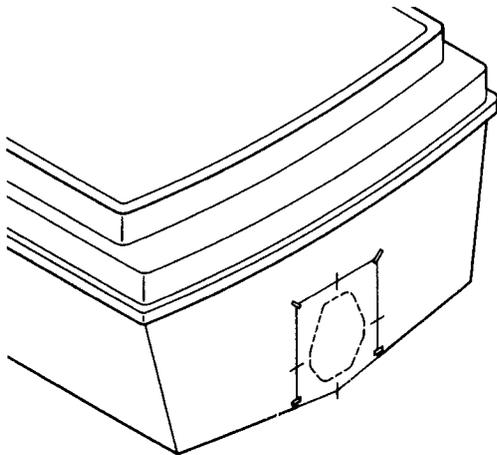


Figure 9

Installation

Align the center-line and horizontal marks on the boat hull with the corresponding marks on the installation template. Secure the template with tape to hold it in the proper position (see figure 9).

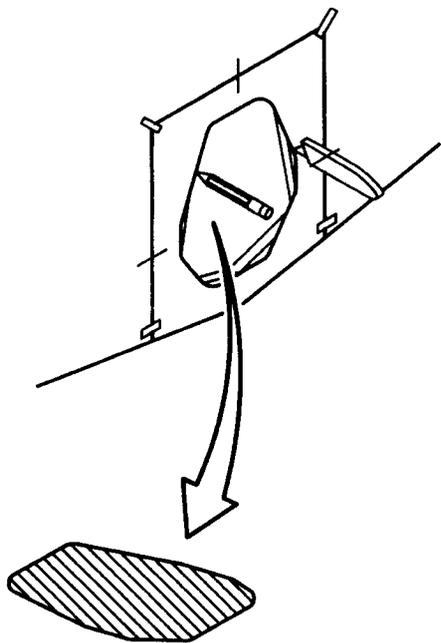


Figure 10

Cut out the center of the template with a utility knife or similar tool. Locate the drill holes on the template and mark them with a scribe or center punch. Marking with a punch will help center the drill bit! Use a permanent marker to identify excess transom material that will have to be removed (see figure 10).

Drill the eight marked holes for the adaptor plate bolts. Be aware that the eight mounting holes are not symmetrically located. It is important to follow the installation template pattern (see figure 12).

NOTE Make sure the drill is held at right angles to the transom and the drill is located in the exact center of the indicated hole on the template.

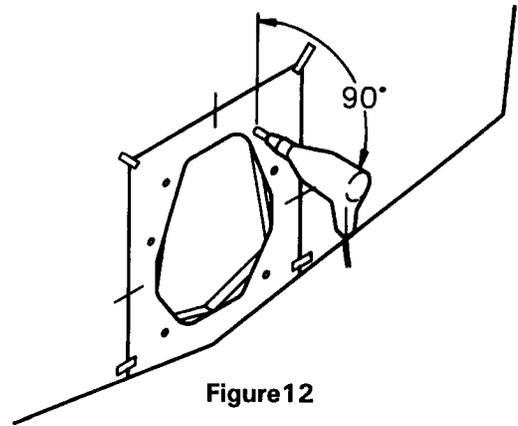


Figure12

Use a heavy-duty sabre saw or reciprocating saw to remove the excess transom material (see figure 13).

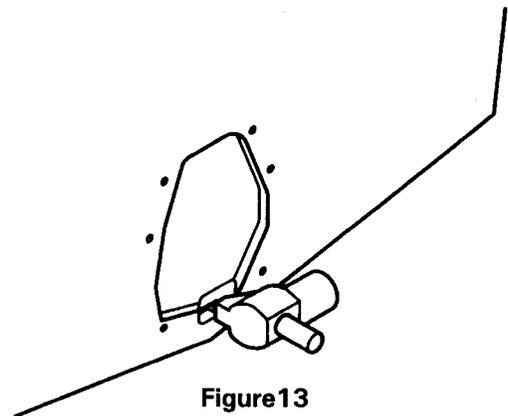


Figure13

Inspect the mounting bolt holes and make sure there is sufficient transom material to adequately support each mounting bolt.

IMPORTANT This Volvo Penta adaptor plate is **not** intended to repair a weak or damaged transom. Deteriorated or rotten transom material must be removed and the transom remanufactured.

When transom is cut to the desired dimensions, coat the exposed wood with sealant (see figure 14).

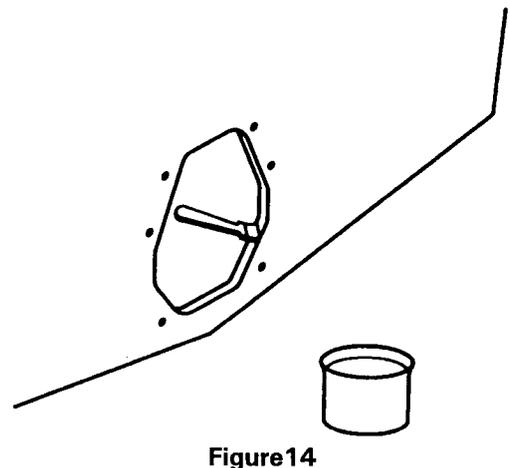


Figure14

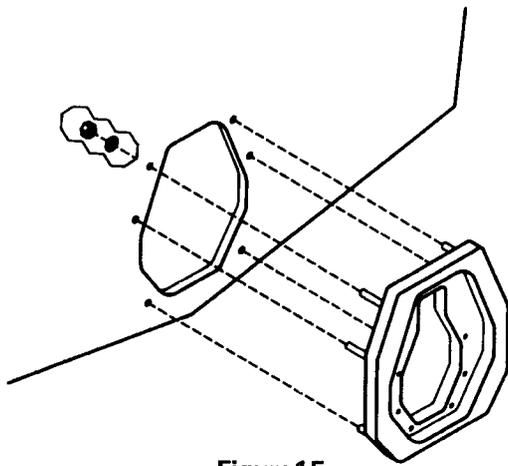


Figure 15

Install the transom shield into the transom while making sure the eight studs insert into the center of each hole. The adaptor should be mounted by firmly pressing into place.

NOTE Do not force the adaptor into place. Check each stud for proper fit in the mounting holes. Mounting holes may have to be enlarged slightly for proper mounting of the adaptor plate.

Install the eight flat washers and lock nuts. Torque the lock nuts to 70-80Nm [52-60 ft./lbs.] (see figure 15).

IMPORTANT The transom area where the adaptor is to be mounted must be flat. A warped transom may cause serious mechanical problems and possibly water entry.

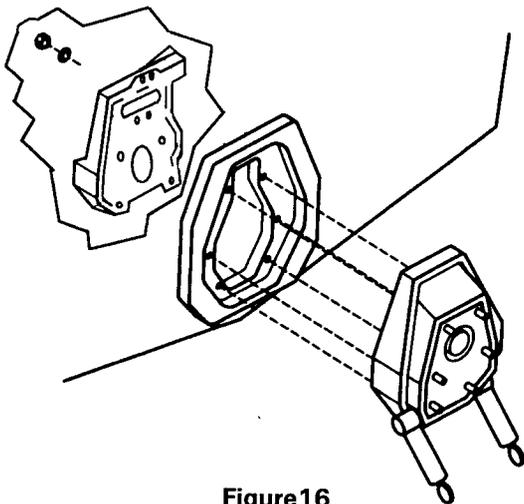


Figure 16

Locate and remove the straight grease fitting for the gimbal bearing on the starboard side of the SX transom shield. Replace the straight fitting with the 45° fitting supplied with the adaptor plate.

NOTE The 45° fitting should be positioned with the nipple pointing aft.

Install the SX transom shield and inner transom plate as described in the *SX Transom Shield Installation Instructions* supplied with the SX transom shield.

NOTE When the SX transom shield bolts are torqued to specification, the inner transom plate must make full contact with the adapter plate and not the inside of the boat's transom. This is necessary in order to avoid fracturing the inner transom plate.

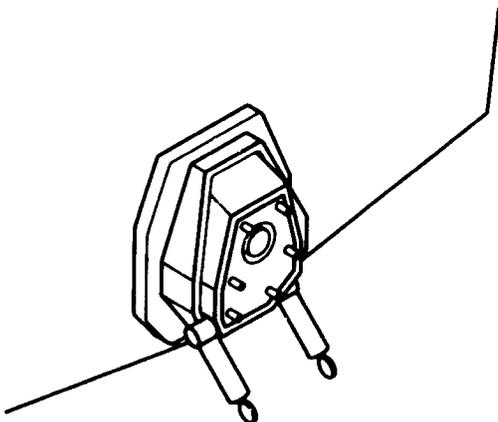


Figure 17

For SX Drive unit installation, refer to the *SX Drive Unit Installation Instructions* or the Volvo Penta Workshop manual: *SX Drive Unit & Transom Shield* p/n 7796484-9.

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