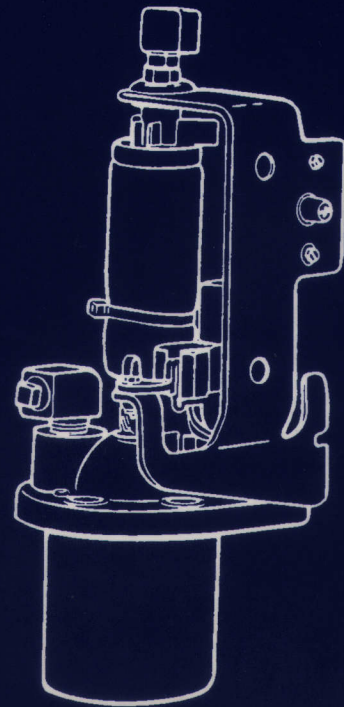
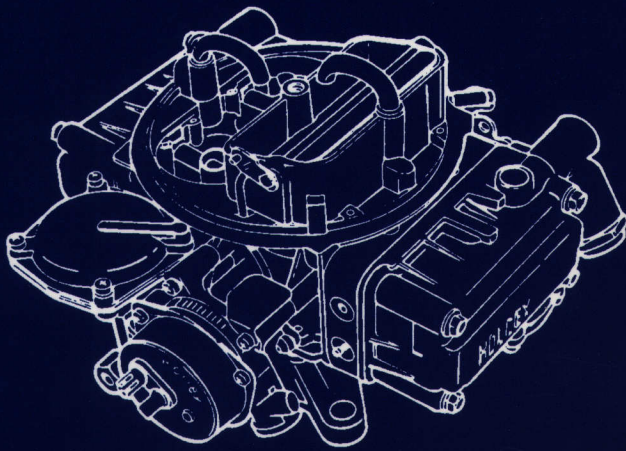


Workshop Manual

"BY" Models

Fuel System




**VOLVO
PENTA**

Safety Warning

This Workshop Manual will alert you to certain procedures that must be done very carefully. If you ignore this information, you could...

- Injure yourself or people around you
- Injure the boat operator, boat passengers, or people around the boat
- Damage the Volvo Penta product or its systems

Understand the following symbols before proceeding:

 Safety Warning	Alerts you to the possibility of danger and identifies information that will help prevent injuries.
Note	Identifies information that will help prevent damage to machinery.
Important	Appears next to information that controls correct assembly and operation of the product.

This Workshop Manual is written for qualified, factory trained service technicians familiar with the use of Volvo Penta special tools.

This Workshop Manual tells you how to correctly maintain and service Volvo Penta products and systems. When correctly serviced, the Volvo Penta product will be reliable and safe to operate.

When Volvo Penta special tools are called for, use them. Where mentioned, the tools are required to perform the service procedure.

If you use service procedures or service tools that are not recommended in this manual, **YOU ALONE** must decide if your actions might injure people or damage the Volvo Penta product.

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This workshop manual is one of a set of four that covers Volvo Penta stern-drive "BY" models. All four books can be ordered as a set from Volvo Penta Parts. Order P/N 7797450-9.

Individual workshop manuals covering these models are also available. Order the following part numbers from *Volvo Penta Parts*.

- ***P/N 7797451-7 Engine Components***

Includes information on Engine service and troubleshooting; Engine removal and installation; Steering systems; Throttle and Shift Control systems; and Cooling systems.

- ***P/N 7797452-5 Electrical & Ignition System***

Includes service and troubleshooting information on Cranking systems; Charging systems; Trim/Tilt electrical systems; Ignition systems; and Engine and Instrument wiring diagrams.

- ***P/N 7797453-3 Fuel System***

Includes service and troubleshooting information on all carburetor, MFI and TBI fuel systems and related components.

- ***P/N 7797454-1 EFI Diagnostic Manual GM***

Contains troubleshooting procedures for all Electronic Fuel Injected GM models and related components.

- ***P/N 7797455-8 SX and DP-S Sterndrives and Transom Shield***

Includes information on Transom Shield, Upper Gear Unit and Lower Gear Unit service; Drive Unit removal and installation; Propellers; and Trim/Tilt hydraulic operation.

**This Volvo Penta Workshop Manual is part of a set that
covers the following Volvo Penta "BY" Models**

Engine	Steering	Model Number	Transom Shield	Drive Unit
3.0 GS	Manual	30GSMBYCCE	3868844	3868895 (1.97:1) SX-M
	Manual	30GSMBYCCE	3868844	3868896 (2.18:1) SX-M
	Manual	30GSMBYCCE	3868845	3868895 (1.97:1) SX-M
	Manual	30GSMBYCCE	3868845	3868896 (2.18:1) SX-M
	Power	30GSPBYCCE	3868844	3868895 (1.97:1) SX-M
	Power	30GSPBYCCE	3868844	3868896 (2.18:1) SX-M
	Power	30GSPBYCCE	3868845	3868895 (1.97:1) SX-M
	Power	30GSPBYCCE	3868845	3868896 (2.18:1) SX-M
4.3 GL	Power	43GLPBYC	3868844	3868892 (1.66:1) SX-M
	Power	43GLPBYC	3868844	3868893 (1.79:1) SX-M
	Power	43GLPBYC	3868844	3868894 (1.89:1) SX-M
	Power	43GLPBYC	3868844	3868913 (1.95:1) DP-SM
	Power	43GLPBYC	3868844	3868914 (2.32:1) DP-SM
	Power	43GLPBYC	3868846	3868892 (1.66:1) SX-M
	Power	43GLPBYC	3868846	3868893 (1.79:1) SX-M
	Power	43GLPBYC	3868846	3868894 (1.89:1) SX-M
	Power	43GLPBYC	3868846	3868913 (1.95:1) DP-SM
	Power	43GLPBYC	3868846	3868914 (2.32:1) DP-SM
4.3 GS	Power	43GSJBYA	—	3868694 PJX-C1
	Power	43GSPBYC	3868844	3868892 (1.66:1) SX-M
	Power	43GSPBYC	3868844	3868893 (1.79:1) SX-M
	Power	43GSPBYC	3868844	3868913 (1.95:1) DP-SM
	Power	43GSPBYC	3868844	3868914 (2.32:1) DP-SM
	Power	43GSPBYC	3868846	3868892 (1.66:1) SX-M
	Power	43GSPBYC	3868846	3868893 (1.79:1) SX-M
	Power	43GSPBYC	3868846	3868913 (1.95:1) DP-SM
	Power	43GSPBYC	3868846	3868914 (2.32:1) DP-SM
4.3 Gi	Power	43GIJBYA	—	3868694 PJX-C1
	Power	43GIPBYCCE	3868844	3868892 (1.66:1) SX-M
	Power	43GIPBYCCE	3868844	3868893 (1.79:1) SX-M
	Power	43GIPBYCCE	3868844	3868913 (1.95:1) DP-SM
	Power	43GIPBYCCE	3868844	3868914 (2.32:1) DP-SM
	Power	43GIPBYCCE	3868846	3868892 (1.66:1) SX-M
	Power	43GIPBYCCE	3868846	3868893 (1.79:1) SX-M
	Power	43GIPBYCCE	3868846	3868913 (1.95:1) DP-SM
	Power	43GIPBYCCE	3868846	3868914 (2.32:1) DP-SM
5.0 GL	Power	50GLPBYC	3868844	3868891 (1.60:1) SX-M
	Power	50GLPBYC	3868844	3868890 (1.51:1) SX-M
	Power	50GLPBYC	3868844	3868912 (1.78:1) DP-SM
	Power	50GLPBYC	3868844	3868913 (1.95:1) DP-SM
	Power	50GLPBYC	3868846	3868891 (1.60:1) SX-M
	Power	50GLPBYC	3868846	3868890 (1.51:1) SX-M
	Power	50GLPBYC	3868846	3868912 (1.78:1) DP-SM
	Power	50GLPBYC	3868846	3868913 (1.95:1) DP-SM

**This *Volvo Penta* Workshop Manual is part of a set that
covers the following *Volvo Penta* "BY" Models**

Engine	Steering	Model Number	Transom Shield	Drive Unit
5.0 Gi	Power	50GIPBYCCE	3868844	3868891 (1.60:1) SX-M
	Power	50GIPBYCCE	3868844	3868890 (1.51:1) SX-M
	Power	50GIPBYCCE	3868844	3868912 (1.78:1) DP-SM
	Power	50GIPBYCCE	3868844	3868913 (1.95:1) DP-SM
	Power	50GIPBYCCE	3868846	3868891 (1.60:1) SX-M
	Power	50GIPBYCCE	3868846	3868890 (1.51:1) SX-M
	Power	50GIPBYCCE	3868846	3868912 (1.78:1) DP-SM
	Power	50GIPBYCCE	3868846	3868913 (1.95:1) DP-SM
5.7 GS	Power	57GSPBYC	3868844	3868889 (1.43:1) SX-M
	Power	57GSPBYC	3868844	3868890 (1.51:1) SX-M
	Power	57GSPBYC	3868844	3868912 (1.78:1) DP-SM
	Power	57GSPBYC	3868844	3868913 (1.95:1) DP-SM
	Power	57GSPBYC	3868846	3868889 (1.43:1) SX-M
	Power	57GSPBYC	3868846	3868890 (1.51:1) SX-M
	Power	57GSPBYC	3868846	3868912 (1.78:1) DP-SM
	Power	57GSPBYC	3868846	3868913 (1.95:1) DP-SM
5.7 GSi	Power	57GSIPBYCCE	3868844	3868889 (1.43:1) SX-M
	Power	57GSIPBYCCE	3868844	3868912 (1.78:1) DP-SM
	Power	57GSIPBYCCE	3868844	3868913 (1.95:1) DP-SM
	Power	57GSIPBYCCE	3868846	3868889 (1.43:1) SX-M
	Power	57GSIPBYCCE	3868846	3868912 (1.78:1) DP-SM
	Power	57GSIPBYCCE	3868846	3868913 (1.95:1) DP-SM
7.4 Gi	Power	74GIPBYCCE	3868844	3868889 (1.43:1) SX-M
	Power	74GIPBYCCE	3868844	3868911 (1.68:1) DP-SM
	Power	74GIPBYCCE	3868844	3868912 (1.78:1) DP-SM
	Power	74GIPBYCCE	3868844	3868913 (1.95:1) DP-SM
	Power	74GIPBYCCE	3868846	3868889 (1.43:1) SX-M
	Power	74GIPBYCCE	3868846	3868911 (1.68:1) DP-SM
	Power	74GIPBYCCE	3868846	3868912 (1.78:1) DP-SM
	Power	74GIPBYCCE	3868846	3868913 (1.95:1) DP-SM
7.4 GSi	Power	74GSIPBYCCE	3868850	3868911 (1.68:1) DP-SM
	Power	74GSIPBYCCE	3868850	3868912 (1.78:1) DP-SM
	Power	74GSIPBYCCE	3868916	3868911 (1.68:1) DP-SM
	Power	74GSIPBYCCE	3868916	3868912 (1.78:1) DP-SM
8.2 GSi	Power	82GSIPBYCCE	3868850	3868911 (1.68:1) DP-SM
	Power	82GSIPBYOCE	3868850	3868912 (1.78:1) DP-SM
	Power	82GSIPBYCCE	3868916	3868911 (1.68:1) DP-SM
	Power	82GSIPBYCCE	3868916	3868912 (1.78:1) DP-SM
DPX 385	Xact	DPX385XBYDCE	3868289	3868637 (1.59:1) DPX-S1
	Xact	DPX385XBYDCE	3868289	3868638 (1.68:1) DPX-S1
	Xact	DPX385XBYDCE	3868289	3868639 (1.78:1) DPX-S1
DPX 415	Xact	DPX415XBYDCE	3868289	3868637 (1.59:1) DPX-S1
	Xact	DPX415XBYDCE	3868289	3868638 (1.68:1) DPX-S1
	Xact	DPX415XBYDCE	3868289	3868639 (1.78:1) DPX-S1

Section 1

General Information

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 **Safety Warning**

Before working on any part of a Volvo Penta sterndrive, read the section called **Safety** at the end of this manual.

Introduction

This service manual covers “BY” model Volvo Penta Sterndrives. It is divided into sections concerning various systems and assemblies. Refer to the Contents to locate the section covering the system or assembly requiring service. Each section title page has an additional listing that will describe the section’s contents in more detail. Be sure to read the Safety Section at the end of this manual, and pay special attention to all safety warnings as they appear throughout the text. Since models are subject to change at any time, some photos may not depict actual product.

Good Service Practice

Service required for an Volvo Penta Stern Drive is generally one of three kinds:

- **Normal care and maintenance** - which includes putting a new sterndrive into operation, storing engines, lubrication, and care under special operating conditions such as salt water and cold weather.
- **Operating malfunctions** - due to improper engine or drive mounting, propeller condition or size, boat condition, or the malfunction of some part of the engine. This includes engine servicing procedures to keep the engine in prime operating condition.
- **Complete disassembly and overhaul** - such as major service or rebuilding a unit.

It is important to determine before disassembly just what the trouble is and how to correct it quickly, with minimum expense to the owner.

When repairing an assembly, the most reliable way to ensure a good job is to do a complete overhaul on that assembly, rather than just to replace the bad part. Wear not readily apparent on other parts could cause malfunction soon after the repair job. Repair kits and seal kits contain all the parts needed to ensure a complete repair, to eliminate guesswork, and to save time.

Repair time can also be minimized by the use of special tools. Volvo Penta special tools are designed to perform service procedures unique to the product that cannot be completed using tools from other sources. They also speed repair work to help achieve service flat rate times. In some cases, the use of substitute tools can damage the part.

Note Do not operate engine out of water even momentarily. If operated in a test tank, use the proper test wheel. Failure to do so can damage water pump, overheat engine, or allow excessive engine RPM.

Preparation for Service

Proper preparation is extremely helpful for efficient service work. A clean work area at the start of each job will minimize tools and parts becoming misplaced. Clean an engine that is excessively dirty before work starts. Cleaning will occasionally uncover trouble sources. 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.

Use proper lifting and handling equipment. Working on sterndrives without proper equipment can cause damage and personal injury.

Always use clean, fresh fuel when testing engines. Troubles can often be traced to the use of old or dirty fuel.

Service Policy

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

It is a Volvo Penta 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 and parts information bulletins, letters and promotions, special tools, and this service manual represent our continuing efforts to assist dealers in giving consumers the best and most prompt service possible. This service manual covers all phases of servicing a Volvo Penta sterndrive unit. If a service question does not appear to be answered in this manual, you are invited to write to the Volvo Penta Service Department for additional help. Always be sure to give complete information, including engine model number and serial number.

Be sure that you are familiar with the Volvo Penta Warranty statement. If you have any questions, write the Volvo Penta Service Department. If other than genuine Volvo Penta replacement components or parts are used, Volvo Penta may refuse subsequent warranty claims involving that engine.

When a brand-name product or specific tool is called for, 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 current US Coast Guard Safety Regulations and ABYC standards.



Replacement Parts

When replacement parts are required, always use genuine Volvo Penta parts, or parts with equivalent characteristics, including type, strength, and material. Failure to do so may result in product malfunction and possible injury to the operator and/or passengers.

Parts Catalogs

Parts Catalogs contain exploded views showing the correct assembly of all parts, as well as a complete listing of the parts for replacement. These catalogs are helpful as a reference during disassembly and reassembly, and are available from Volvo Penta.

Special Service Tools

Volvo Penta has specially designed tools to simplify some of the disassembly and assembly operations. These tools are illustrated in this Service Manual, in many cases in actual use. All Volvo Penta special tools can be ordered from Volvo Penta *Genuine Parts* division. Individual purchasers of Service Manuals must order Special Tools through an authorized dealer.

Product References, Illustrations & Specifications

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

All photographs and illustrations used in this manual may not depict actual models or equipment, but are intended as representative views for reference only. The continuing accuracy of this manual cannot be guaranteed.

