

Workshop Manual

Sterndrive

C
2(0)

SX-S

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 seven that covers *Volvo Penta* stern drive models. All seven books can be ordered as a set from *Volvo Penta Parts*. Order P/N 7796741-2.

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

- **P/N 7796484-9 Drive Unit and Transom Shield - SX models**

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

- **P/N 7796485-6 Engines**

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

- **P/N 7796456-7 Electrical/Ignition Systems - all models**

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

- **P/N 7796457-5 Fuel Systems - all models**

Includes service and troubleshooting information on all carbureted and EFI fuel systems and related components.

- **P/N 7796458-3 Diagnostic Manual - Ford Fi Models Only**

Includes step by step troubleshooting procedures for all EFI related components and wiring.

- **P/N 7796431-0 Diagnostic Manual - GM Gi Models Only**

Contains troubleshooting procedures for all Gi models and related components.

- **P/N 7731624-8 SP and DP Workshop Manual**

Includes information on Upper Gear Unit and Lower Gear Unit overhaul procedures, installation and removal.

**This Volvo Penta Stern Drive Workshop Manual
Covers The Following Volvo Penta SX Models**

Engine	Model Number	Transom Shield	Drive Unit
3.0 GL (M)	3868033	3868090	3868035 (1.85:1)
3.0 GS (P)	3868034	3868090	3868035 (1.85:1)
4.3 GL (P)	3868046	3868036	3868077 (1.66:1)
4.3 GS (P)	3868089	3868036	3868077 (1.66:1)
4.3 GS (P)	3868007	3868003	3868008 (2.30:1)*
5.0 FL (P)	3868055	3868036	3868077 (1.60:1)
5.0 FI (P)	3868127	3868036	3868077 (1.60:1)
5.0 FI (P)	3868127	3868036	3868068 (1.60:1)
5.7 GL (P)	3868067	3868036	3868068 (1.60:1)
5.7 GL (P)	3868013	3868003	3868002 (1.95:1)*
5.7 Gi (P)	3868010	3868003	3868022 (1.78:1)*
5.8 FL (P)	3868056	3868036	3868058 (1.51:1)
5.8 FI (P)	3868128	3868036	3868058 (1.51:1)
7.4 GL (P)	3868015	3868003	3868022 (1.78:1)*
7.4 GL (P)	3868132	3868003	3868022 (1.78:1)*
8.2 GL (P)	3868019	3868024	3868020 (1.59:1) ● 3868021 (1.68:1) ● 3868023 (1.78:1) ●
8.2 GL (P)	3868133	3868024	3868020 (1.59:1) ● 3868021 (1.68:1) ● 3868023 (1.78:1) ●

(M) = Mechanical Steering

(P) = Power Steering

● DPX DRIVE UNIT

*Duoprop DRIVE UNIT

Note Duoprop and DPX Drive Unit repairs are covered extensively in the Duoprop/DPX Workshop Manuals.

Section 1

General Information

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Safety Warning

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

Introduction

This workshop manual covers *Volvo Penta SX* stern drive models. It's 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 *Volvo Penta* stern drives is generally one of three kinds:

- **Normal care and maintenance** - which includes putting a new stern drive 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's 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 test tank, use 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 stern drives 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 their products.

It's *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 this Workshop Manual represent *Volvo Penta's* efforts to assist dealers in giving consumers the best and most prompt service possible. 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 *Volvo Penta's* Warranty. 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 U.S. 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 the *Volvo Penta Parts Dept.*

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 Workshop Manual, in many cases in actual use. All *Volvo Penta* special tools can be ordered from the *Volvo Penta Parts Dept.* Individual purchasers of Workshop Manuals must order Special Tools through an authorized *Volvo Penta* dealer.

Product References, Illustrations & Specifications

Volvo Penta 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.



Drive Unit Lubrication - SX Models

Adding Lubricant to Drive Unit

1 Occasionally check oil level in drive unit. Screw dipstick **A** fully into hole. Remove and read oil level in reference to mark on dipstick. If oil level is low, add oil through dipstick opening. Add only enough lubricant to bring the oil level to the full mark.

Drive Unit Oil Capacity

Change Lubricant Every 100 Hours or Once Each Season Use <i>DuraPlus™ synthetic GL5</i> gear oil	
All Volvo Penta SX Models	71 oz. (2100 cc)

Draining and Filling Drive Unit

When a complete change of lubricant is required in the drive unit, proceed as follows:

1. Place drive unit in the run (full down) position. Place a 4 quart drain pan under lower gear unit skeg to catch oil.

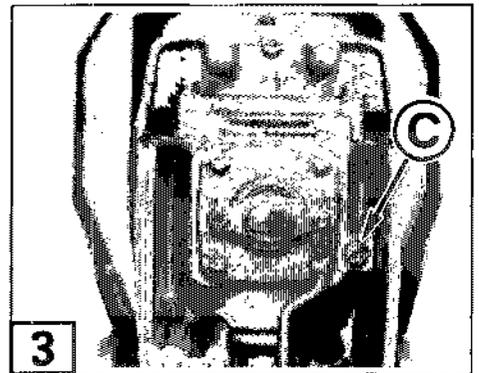
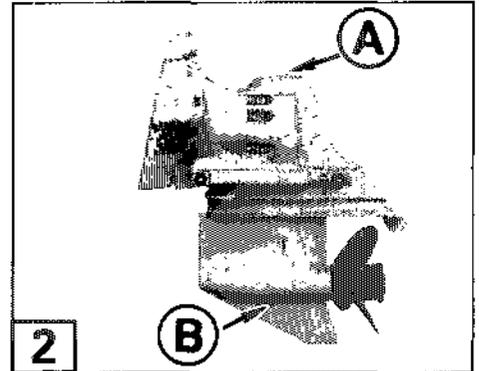
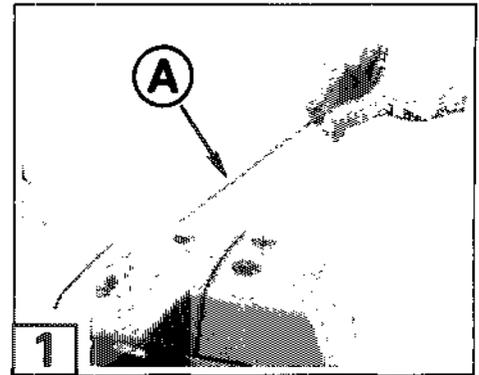
2 2. Remove oil drain plug **B** (port side of lower gear unit) and oil level dipstick **A** (top of drive unit). Removing dipstick vents drive to improve oil draining. Allow oil to drain completely.

2 **3** 3. Remove three screws securing the rear cover to access the oil level plug **C**. Fill drive unit with *DuraPlus™ synthetic GL5* gear oil through oil drain plug hole **B**. Fill slowly to purge air. Vertical drive is properly filled when the oil level appears at the oil level plug hole. When filled to the proper level, install oil level dipstick and the oil level plug first to prevent excessive oil loss, then the oil drain plug. Tighten oil level drain plugs securely.

Note Filling drive unit too quickly may form air pockets that will cause an inaccurate oil level reading. Running the drive unit with improper oil level will result in immediate internal damage.

4. Install rear cover and tighten screws securely.

1 5. Check oil level with dipstick. Oil level must appear on the blade of the dipstick. Add oil if required, through the dipstick hole.



6. Tighten fill plug to 60-84 in. lbs. (6,8-9,5 N·m). Tighten oil level dipstick to 48-72 in. lbs. (5,4-8,1 N·m)

Note If lubricant has been completely changed, oil level must be rechecked after unit has been run and trapped air purged. Improper oil level will result in serious internal drive unit damage. Add make-up oil through dipstick opening to bring oil up to proper level.

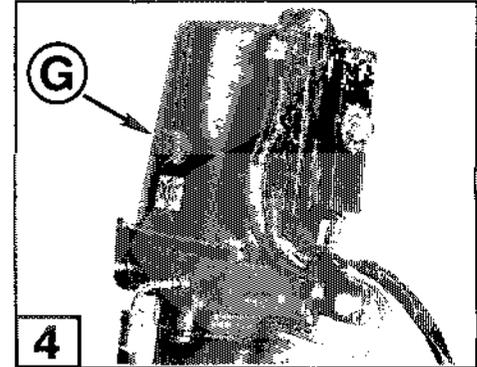
Power Trim/Tilt-Fluid Level

4 The trim/tilt assembly contains the electric motor, hydraulic pump, and reservoir. At the beginning of each boating season, check the fluid level in the reservoir as follows:

⚠ The trim/tilt hydraulics are pressurized when the drive unit is in the down position. The drive unit must be tilted full up to relieve hydraulic pressure before removing level/fill plug **G**. Failure to tilt the drive unit to the full up position before removing level/fill plug would result in a hazardous spray of hydraulic oil. Caution should always be taken when removing level/fill plug by placing a rag over the level/fill plug to prevent residual pressure from spraying oil.

1. With the drive unit tilted full up, slowly and carefully remove the level/fill plug.
2. Check the fluid level. The fluid should be level with the bottom of the fill hole when the drive unit is at full tilt.
3. If necessary, add *Volvo Penta power trim/tilt & steering fluid*. Replace the level/fill plug and tighten securely.

Note When checking fluid level, inspect the trim/tilt unit for leaks and proper operation. Repair or replace defective components.



Off-Season Storage Preparations - SX Models

1. Change Drive Unit Lubricant:

Drain and refill with fresh *DuraPlus synthetic GL5* gear oil. Refer to Drive Unit Lubrication elsewhere in this section.

2. **Lubricate Gimbal Bearing and Universal Joints:** Refer to information elsewhere in this section.

3. **Inspect Drive Unit Water Pickup Screens for Obstructions.**

Note See Engine Workshop Manual for additional engine off-season storage procedures.

Preparation for Boating After Storage

See *Engine Workshop Manual* for specific information.

VOLVO PENTA DEALER Service - 20-Hour Check

20-Hour Check includes:

1. Change engine oil and oil filter.
2. Drain and refill drive unit. Check the trim/tilt reservoir for proper fluid level.
-  3. Lubricate steering cable ram with *Volvo Penta Grease*, and check power steering pump reservoir for correct fluid level.
4. Change fuel filter/water separator.
5. Check tension on all drive belts.
6. Non-EFI Models Only: Check engine timing.
7. Non-EFI Models Only: Check and adjust carburetor for correct idle mixture and idle RPM.
8. Check all engine mount screws for tightness.
9. Lubricate gimbal bearing grease fitting on transom shield. Lubricate both U-joint grease fittings on drive unit.
10. Check engine alignment.
11. Check for any deficiencies, malfunctions, signs of abuse, etc. Correction of any problems at this time will prevent worsening of a minor problem and help ensure a trouble-free boating season.
12. Inspect exhaust system and tighten all hose clamps.
13. Make sure engine can achieve maximum rated RPM.

For the U.S., Canada, and Mexico, the 20-Hour Check is paid for by the boat owner and performed by your *Volvo Penta* dealer at local rates. In other markets the Warranty Inspection is paid for according to the Warranty Policy for Importers.



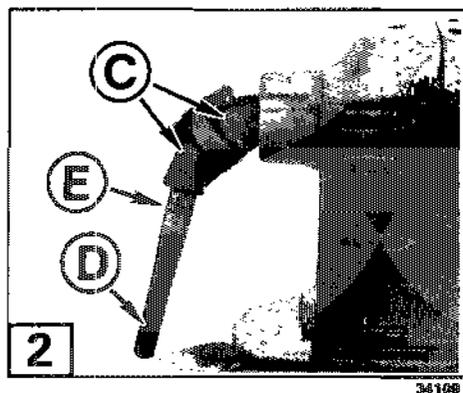
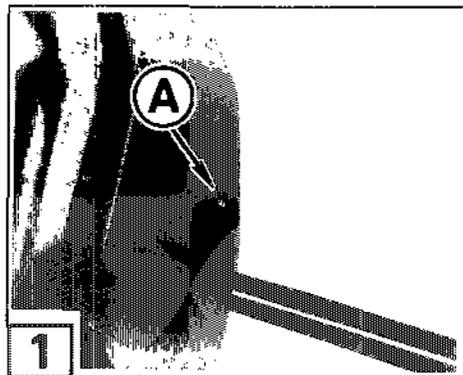
Gimbal Bearing and Universal Joints Lubrication

The gimbal bearing and universal joints **MUST** be lubricated each year. Lubricate the gimbal bearing and universal joints when preparing your boat for off-season storage. This requires the removal of the drive unit; therefore, *Volvo Penta* recommends that your *Volvo Penta* dealer perform this operation.

Note Failure to lubricate the gimbal bearing and universal joints each year will result in damage to the transom shield and drive unit.

1 The gimbal bearing is lubricated by a grease fitting located on the starboard side (A), *Volvo Penta SX* models, of the gimbal housing. *Volvo Penta* recommends that lubrication of the gimbal bearing be done with drive unit removed. This will allow observation of old grease as it's being replaced by the new. If there is evidence of water, the bearing should be inspected and replaced. Lubricate gimbal bearing with Wheel Bearing Grease. Apply grease until all old grease has been removed and new grease appears.

2 The drive unit must be removed to lubricate the universal joints. Lubricate U-joints with Wheel Bearing Grease. Apply grease to the two U-joint grease fittings (C) until all old grease is removed. When the drive unit is removed, wipe old grease and dirt off driveshaft splines, then thoroughly clean splines before applying new grease. The driveshaft splines (D) must be lubricated with Molybdenum Grease, and light oil applied to the shaft O-rings (E). The bellows should be checked for damage and deterioration. Replace if necessary. Engine alignment must also be checked. Refer to **Drive Unit Installation** in **Drive Unit Removal and Installation** section of this manual.



METRIC CONVERSION CHART

LINEAR

inches	X 25.4	= millimetres (mm)
feet	X 0.3048	= metres (m)
yards	X 0.9144	= metres (m)
miles	X 1.6093	= kilometres (km)
inches	X 2.54	= centimetres (cm)

AREA

inches ²	X 645.16	= millimetres ² (mm ²)
inches ²	X 6.452	= centimetres ² (cm ²)
feet ²	X 0.0929	= metres ² (m ²)
yards ²	X 0.8361	= metres ² (m ²)
acres	X 0.4047	= hectares (10 ⁴ m ²) (ha)
miles ²	X 2.590	= kilometres ² (km ²)

VOLUME

inches ³	X 16387	= millimetres ³ (mm ³)
inches ³	X 16.387	= centimetres ³ (cm ³)
inches ³	X 0.01639	= litres (l)
quarts	X 0.94635	= litres (l)
gallons	X 3.7854	= litres (l)
feet ³	X 28.317	= litres (l)
feet ³	X 0.02832	= metres ³ (m ³)
fluid oz	X 29.57	= millilitres (ml)
yards ³	X 0.7646	= metres ³ (m ³)

MASS

ounces (av)	X 28.35	= grams (g)
pounds (av)	X 0.4536	= kilograms (kg)
tons (2000 lb)	X 907.18	= kilograms (kg)
tons (2000 lb)	X 0.90718	= metric tons (t)

FORCE

ounces - f (av)	X 0.278	= newtons (N)
pounds - f (av)	X 4.448	= newtons (N)
kilograms - f	X 9.807	= newtons (N)

ACCELERATION

feet/sec ²	X 0.3048	= metres/sec ² (m/S ²)
inches/sec ²	X 0.0254	= metres/sec ² (m/S ²)

ENERGY OR WORK

foot-pounds	X 1.3558	= joules (j)
calories	X 4.187	= joules (j)
Btu	X 1055	= joules (j)
watt-hours	X 3500	= joules (j)
kilowatt - hrs	X 3.600	= megajoules (MJ)

FUEL ECONOMY AND FUEL CONSUMPTION

miles/gal	X 0.42514	= kilometres/litre (km/l)
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Note:

235.2/(mi/gal) = litres/100 km
235.2/(litres/100 km) = mi/gal

LIGHT

footcandles	X 10.76	= lumens/metre ² (lm/m ²)
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PRESSURE OR STRESS

inches HG (60°F)	X 3.377	= kilopascals (kPa)
pounds/sq in	X 6.895	= kilopascals (kPa)
inches H ₂ O (60°F)	X 0.2488	= kilopascals (kPa)
bars	X 100	= kilopascals (kPa)
pounds/sq ft	X 47.88	= pascals (Pa)

POWER

horsepower	X 0.746	= kilowatts (kW)
ft-lbf/min	X 0.0226	= watts (W)

TEMPERATURE

°Celsius = 0.556 X (°F -32)
°Fahrenheit = (1.8 X °C) +32

TORQUE

pound-inches	X 0.11299	= newton-metres (N·m)
pound-feet	X 1.3558	= newton-metres (N·m)

VELOCITY

miles/hour	X 1.6093	= kilometres/hour (km/h)
feet/sec	X 0.3048	= metres/sec (m/s)
kilometres/hr	X 0.27778	= metres/sec (m/s)
miles/hour	X 0.4470	= metres/sec (m/s)

Drill Size Conversion Chart

SHOWING MILLIMETER SIZES, FRACTIONAL AND DECIMAL INCH SIZES AND NUMBER DRILL SIZES

Milli-Meter	Dec. Equiv.	Frac-tional	Num-ber	Milli-Meter	Dec. Equiv.	Frac-tional	Num-ber	Milli-Meter	Dec. Equiv.	Frac-tional	Num-ber	Milli-Meter	Dec. Equiv.	Frac-tional	Num-ber	Milli-Meter	Dec. Equiv.	Frac-tional
.1	.0039			1.75	.0689			...	.1570		22	6.8	.2677			10.72	.4219	27/64
.15	.0059			...	.0700		50	4.0	.1575			6.9	.2716			11.0	.4330	
.2	.0079			1.8	.0709			...	.1590		21	...	.2720	I		11.11	.4375	7/16
.25	.0098			1.85	.0728			...	.1610		20	7.0	.2756			11.5	.4528	
.3	.0118			...	.0730		49	4.1	.1614			...	.2770	J		11.51	.4531	29/64
...	.0135		80	1.9	.0748			4.2	.1654			7.1	.2795			11.91	.4687	15/32
.35	.0138			...	.0760		48	...	.1660		19	...	.2811	K		12.0	.4724	
...	.0415		79	1.95	.0767			4.25	.1673			7.14	.2812	3/32	...	12.30	.4843	31/64
.39	.0156	1/64	...	1.98	.0781	5/64	...	4.3	.1693			7.2	.2835			12.5	.4921	
.4	.0157			...	.0785		47	...	.1695		18	7.25	.2854			12.7	.5000	1/2
...	.0160		78	2.0	.0787			4.37	.1719	11/64	...	7.3	.2874			13.0	.5118	
.45	.0177			2.05	.0807			...	.1730		17	...	.2900	L		13.10	.5156	33/64
...	.0180		77	...	.0810		46	4.4	.1732			7.4	.2913			13.49	.5312	17/32
.5	.0197			...	.0820		45	...	.1770		16	...	.2950	M		13.5	.5315	
...	.0200		76	2.1	.0827			4.5	.1771			7.5	.2953			13.89	.5469	35/64
...	.0210		75	2.15	.0846			...	.1800		15	7.54	.2968	19/64	...	14.0	.5512	
.55	.0217			...	.0860		44	4.6	.1811			7.6	.2992			14.29	.5624	9/16
...	.0225		74	2.2	.0866			...	.1820		14	...	.3020	N		14.5	.5709	
.6	.0236			2.25	.0855			4.7	.1850		13	7.7	.3031			14.68	.5781	37/64
...	.0240		73	...	.0890		43	4.75	.1870			7.75	.3051			15.0	.5906	
...	.0250		72	2.3	.0905			4.76	.1875	3/16	...	7.8	.3071			15.08	.5937	19/32
.65	.0256			2.35	.0925			4.8	.1890		12	7.9	.3110			15.48	.6094	39/64
...	.0260		71	...	.0935		42	...	.1910		11	7.94	.3125	5/16	...	15.5	.6102	
...	.0280		70	2.38	.0937	3/32	...	4.9	.1929			8.0	.3150			15.88	.6250	5/8
.7	.0276			2.4	.0945			...	.1935		10	...	.3160	O		16.0	.6299	
...	.0292		69	...	.0960		41	...	.1960		9	8.1	.3189			16.27	.6406	41/64
.75	.0295			2.45	.0964			5.0	.1968			8.2	.3228			16.5	.6496	
...	.0310		68	...	.0980		40	...	.1990		8	...	.3230	P		16.67	.6562	21/32
.79	.0312	1/32	...	2.5	.0984			5.1	.2008			8.25	.3248			17.0	.6693	
.8	.0315			...	.0995		39	...	.2010		7	8.3	.3268			17.06	.6719	43/64
...	.0320		67	...	.1015		38	5.16	.2031	13/64	...	8.33	.3281	21/64	...	17.46	.6875	11/16
...	.0330		66	2.6	.1024			...	.2040		6	8.4	.3307			17.5	.6890	
.85	.0335			...	.1040		37	5.2	.2047			...	.3320	Q		17.86	.7031	45/64
...	.0350		65	2.7	.1063			...	.2055		5	8.5	.3346			18.0	.7087	
.9	.0354			...	.1065		36	5.25	.2067			8.6	.3386			18.26	.7187	23/32
...	.0360		64	2.75	.1082			5.3	.2086			...	.3390	R		18.5	.7283	
...	.0370		63	2.78	.1094	7/64	...	...	.2090		4	8.7	.3425			18.65	.7344	47/64
.95	.0374			...	.1100		35	5.4	.2126			8.73	.3437	11/32	...	19.0	.7480	
...	.0380		62	2.8	.1102			...	.2130		3	8.75	.3445			19.05	.7500	3/4
...	.0390		61	...	.1110		34	5.5	.2165			8.8	.3465			19.45	.7656	49/64
1.0	.0394			...	.1130		33	5.56	.2187	7/32	...	...	.3480	S		19.5	.7677	
...	.0400		60	2.9	.1141			5.6	.2205			8.9	.3504			19.84	.7812	25/32
...	.0410		59	...	.1160		32	...	.2210		2	9.0	.3543			20.0	.7874	
1.05	.0413			3.0	.1181			5.7	.2244			...	.3580	T		20.24	.7969	51/64
...	.0420		58	...	.1200		31	5.75	.2263			9.1	.3583			20.5	.8071	
...	.0430		57	3.1	.1220			...	.2280		1	9.13	.3594	23/64	...	20.64	.8125	13/16
1.1	.0433			3.18	.1250	1/8	...	5.8	.2283			9.2	.3622			21.0	.8268	
1.15	.0452			3.2	.1260			5.9	.2323			9.25	.3641			21.04	.8218	53/64
...	.0465		56	3.25	.1279			...	.2340		A	9.3	.3661			21.43	.8437	27/32
1.19	.0469	3/64	...	...	.1285		30	5.95	.2344	15/64	...	...	.3680	U		21.5	.8465	
1.2	.0472			3.3	.1299			6.0	.2362			9.4	.3701			21.83	.8594	55/64
1.25	.0492			3.4	.1338			...	.2380		B	9.5	.3740			22.0	.8661	
1.3	.0512			...	.1360		29	6.1	.2401			9.53	.3750	3/8	...	22.23	.8750	7/8
...	.0520		55	3.5	.1378			...	.2420		C	...	.3770	V		22.5	.8858	
1.35	.0513			...	.1405		28	6.2	.2441			9.6	.3780			22.62	.8906	57/64
...	.0550		54	3.57	.1406	5/64	...	6.25	.2460			9.7	.3819			23.0	.9055	
1.4	.0551			3.6	.1417			6.3	.2480			9.75	.3838			23.02	.9062	29/32
1.45	.0570			...	.1440		27	6.35	.2500	1/4	E	9.8	.3858			23.42	.9219	59/64
1.5	.0591			3.7	.1457			6.4	.2520			...	.3860	W		23.5	.9252	
...	.0595		53	...	.1470		26	6.5	.2559			9.9	.3839			23.81	.9375	15/16
1.55	.0610			3.75	.1476			...	.2570		F	9.92	.3906	25/64	...	24.0	.9449	
1.59	.0625	1/16	...	...	.1495		25	6.6	.2598			10.0	.3937			24.21	.9531	61/64
1.6	.0629			3.8	.1496			...	.2610		G	...	.3970	X		24.5	.9646	
...	.0635		52	...	.1520		24	6.7	.2638			...	.4040	Y		24.61	.9687	31/32
1.65	.0649			3.9	.1535			6.75	.2657	13/64	...	10.32	.4062	13/32	...	25.0	.9843	
1.7	.0669			...	.1540		23	6.75	.2657			...	.4130	Z		25.03	.9844	63/64
...	.0670		51	3.97	.1562	5/32	...	...	.2660		H	10.5	.4134			25.4	1.0000	1

SYMBOLS

Certain symbols or combinations of symbols may appear on your *Volvo Penta SX* stern drive or on their accessories. It is very important that you understand their meaning or purpose. If any symbol is not clearly understood, see your Dealer.

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“Safety Warning” Symbols

	<ul style="list-style-type: none"> • Risk of serious injury • Be careful • Follow instructions 		<p>POISONOUS</p>		<p>Fire hazard</p>
			<p>Contents under pressure</p>		

“Position Indicator” Symbols

	<p>RAISE</p>		<p>LOWER</p>	<p>Shift positions NEUTRAL</p> <p>FORWARD REVERSE</p>
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“Condition” Symbols

	<p>Hour meter</p>		<ul style="list-style-type: none"> • Voltmeter • Ammeter 		<p>Tachometer</p>
	<p>Voltmeter</p>		<p>Oil filter</p>		<p>Fuel filter</p>
	<p>Water temperature</p>		<p>Emergency stop</p>		<p>Oil pressure</p>

“Instructional” Symbols

	<ul style="list-style-type: none"> • Use gasoline • Gasoline is present 		<p>Read Operator's Manual before operating product</p>		<p>Oil fill</p>
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Lubrication and Inspection Chart

Transom Shield and Drive Unit

Service Point	Every 25 Hours or as Specified	Every 100 Hours or as Specified	Recommendations
Gimbal Bearing		Lubricate seasonally. NOTE: Do not use a power operated grease gun.	Use Wheel Bearing Grease.
Trim/Tilt Pump		Seasonally check fluid level in reservoir. Check for leaks and proper operation.	Use Volvo Penta power trim/tilt & steering fluid.
Universal Joints and Bellows		Lubricate seasonally. NOTE: Do not use a power operated grease gun.	Use Wheel Bearing Grease. Inspect bellows annually.
Drive Unit		Drain and refill. Check level occasionally during boating season.	Use DuraPlus synthetic GL5 gear oil.
U-joint Shaft Splines		Lubricate seasonally.	Use Molybdenum Grease.

