**Parts Bulletin**

Volvo Penta of the Americas
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Chesapeake, Virginia 23320-9810

**Longblock guidelines, 4.3L**

Models: 4.3Gi, GS, GL, see list

**Distribution:** Parts  
**Date:** July, 2009  
**Binder:** Parts  
**Replaces:** P-21-0-15v02

**NOTICE!** Please read and understand Parts Bulletin P-21-0-1 before ordering any parts or long blocks. Bulletin P-21-0-1 contains important information that applies to all gas engine long block service.

**4.3L Models covered by this bulletin:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Model</th>
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<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>3868943</td>
<td>4.3GiPWTC</td>
<td>3868619</td>
<td>4.3GSPLKD</td>
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<tr>
<td>3868942</td>
<td>4.3GSPWTC</td>
<td>3868618</td>
<td>4.3GLPLKD</td>
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<td>3868941</td>
<td>4.3GSPWTC</td>
<td>3868605</td>
<td>4.3GSJLKD</td>
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<tr>
<td></td>
<td>does not cover PWTR</td>
<td>3868566</td>
<td>4.3GLPNCB</td>
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<tr>
<td>3868762</td>
<td>4.3GSJBYA</td>
<td>3868487</td>
<td>4.3GSJNCC</td>
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<td>4.3GiPNCBCE</td>
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<td>4.3GSPNBC</td>
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<td>4.3GSPLKE</td>
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<td>4.3GSPNCS</td>
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<td>3868620</td>
<td>4.3GiPLKDCE</td>
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</table>

The current long block for these engines is **21165946**. The previous long block, 3862055 is no longer available from the supplier and is now replaced by new long block 21165946.

The following parts are not included with 21165946:

**Circulation pump**  
**Intake manifold**  
**Flywheel**

The flywheel from the original engine will not mount to the long block. For flywheel order; 1 ea. 3858694 flywheel

For 290DP applications, also order; 6 ea. 3856130 screw, flywheel

A new circulation pump should be installed. For pump order; 1 ea. 3853850 pump, circulation 2 ea. 3852477 gaskets, pump

The circulation pump bolts from the original engine can be re-used to mount the pump.

Additional model specific parts that are needed are listed later in this bulletin.
The Crankshaft Sensor is not included with the new longblock. Move the sensor from the original engine to the longblock.

**NOTICE!** Install sensor with o-ring. If original o-ring is worn or damaged, replace. See catalog for o-ring PIN.

On **GL/GS models** the sensor is installed in the timing cover but is not electrically functional. The sensor is not connected to the engine harness. The sensor is needed to seal the timing cover and crankcase.

The following parts come with 21165946;

<table>
<thead>
<tr>
<th>Part no.</th>
<th>name</th>
<th>#</th>
<th>use</th>
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</thead>
<tbody>
<tr>
<td>3853273</td>
<td>locknut</td>
<td>6</td>
<td>coupler studs</td>
</tr>
<tr>
<td>3853274</td>
<td>stud</td>
<td>6</td>
<td>coupler, SX/DP-S/ XDP</td>
</tr>
<tr>
<td>3857937</td>
<td>stud</td>
<td>2</td>
<td>ground</td>
</tr>
</tbody>
</table>

21165946 is painted red. All from list were painted dark charcoal. For dark charcoal paint order;

3851221, OAL spray can

21165946 comes with high quality spark plugs designed for late model ignitions. The plugs are gapped (G) at 0.060" (1.52mm). These plugs will work correctly in these engines, however the plugs will have to be re-gapped to match the ignition on the original engine. All from list, plug gap is; 0.045" (1.14mm).
The following applies to all engines in list:
There are several parts issues that must be considered;

1. The bore (B) in the longblock’s crankshaft, where the drive coupler or pilot bushing sits is larger than on the original engine.

**NOTICE!** The coupler or bushing from the original engine will not mount correctly on the long block. Part or longblock failure will occur if these parts are re-used on the long block.

For engines with SX, DP-S drives, order new coupler 3858437.
Studs and locknuts come with long block.

For engines with DP-D (290) drive, new pilot bushing 3858846 is included in kit 3858443, see details below.
Re-use damper and hardware.

For engines with PJX drives, order new coupler 3858464.
Studs and locknuts come with long block.
2. 21165946 has **metric** threads at the attaching points for the starter, flywheel housing, and motor mount brackets.

**Order kit 3858443,** which contains the following parts (A, B & C):

A. Metric hardware for motor mount brackets, starter and SX/DP-S flywheel housing, see picture.

B. Complete oil tube assembly, see picture.

Mounting tab (M) on oil tube assembly attaches to front of port cylinder head, outer hole. Most engines, tab mounts behind steering pump bracket.

**NOTICE!** do not bend tube to install, bending could alter oil level on dipstick and give incorrect oil fill reading.

C. Bolt to secure damper and spacer to crankshaft. Use only with crank mounted sea water pumps
For engines with DP-D (290) drive, order; 6 ea. 965220 screw, flywheel housing
Not included in kit 3858443.

For 4.3GL engines, also order the following gaskets, seals;
1 ea. 3852109 gasket, distributor
1 ea. 3852111 gasket, thermo housing
1 ea. 3852479 o-ring, pwr. strg. line
1 ea. 3853279 gasket, carb adapter
1 ea. 3853280 gasket, carb to adapter
2 ea. 3853412 gasket, exhaust manif.
1 ea. 3855807 gasket, intake set

For 4.3Gi engines, also order the following gaskets and seals;
1 ea. 3850423 o-ring, fuel pump
1 ea. 3850424 o-ring, fuel pump
1 ea. 3852109 gasket, distributor
1 ea. 3852111 gasket, thermo housing
2 ea. 3853412 gasket, exh. manifold
1 ea. 3853674 o-ring, oil fitting ret.
1 ea. 3855807 gasket, intake set
1 ea. 3852479 o-ring, pwr. strg. line
1 ea. 3850405 gasket, TBI adapter
1 ea. 3850355 gasket, TBI to adapter
For 4.3GS engines, also order the following gaskets and seals:

1 ea. 3852109 gasket, distributor
1 ea. 3852111 gasket, thermo housing
2 ea. 3853412 gasket, exh. manifold
1 ea. 3853674 o-ring, oil fitting ret.
1 ea. 3855807 gasket, intake set
1 ea. 3852479 o-ring, pwr. strg. line
1 ea. 3852437 gasket, carb adapter
1 ea. 3853497 gasket, carb to adapter
3. 21165946 has no intake manifold. The intake from the original engine must be moved to the longblock.

Remove intake and fuel system from original engine. If possible remove as an assembly.
Gi - Disconnect fuel lines at fuel pump end, not TBI end.
Discard intake gaskets.
Save intake/fuel assembly, intake screws.
Inspect all saved parts for condition, replace as needed.
Clean all saved parts with brush and cleaning solvent.
Do not immerse intake/fuel assembly in cleaning solvent.

Install gasket, sealer and intake assembly on longblock.

NOTICE! Engine failure may occur if intake is not installed correctly on longblock.

Check Workshop Manual 7743365 covering 4.3L Engine Mechanical for the procedure for the sealer (5) and torquing the bolts (T) on the intake. Both procedures are critical and must be followed.

Continue with longblock installation.