



**TRANS ATLANTIC
DIESELS, INC.**

Trans Atlantic Diesels, Inc.
P.O. Box 70
White Marsh, VA 23183
Tel: (804) 642-9296 Email:
tadinc@earthlink.net

PERKINS 4.108 SERPENTINE PULLEY KIT INSTALLATION INSTRUCTIONS

These instructions are for installation guidance only.

All normal safety precautions should be followed.

IF YOU HAVE ANY DOUBTS OR QUESTIONS PLEASE CONTACT US

Toll Free: 1-804-642-9296

Email: tadinc@earthlink.net

What's Included:





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Crankshaft Serpentine Pulley - p/n T336-108C



New Fresh Water Pump with Serpentine Pulley already fitted.
p/n T0054/336- 108W



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8-Groove Serpentine Pulley for Alternator. (17mm bore)
Fits the Balmar 60, 70 and 90 series and most common Delco Alternators and others.
p/n T3781

We intentionally supply an 8-groove alternator pulley for the 6-groove system to allow for alignment options. Be assured, the belt will not jump track once properly aligned.



6-Groove K6 Serpentine Belt p/n T060400 for 4.108
Only for Westerbeke 40 - 1 x 6-Groove K6 Serpentine Belt p/n T060415



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Only for Bowman Manicooler - 1 3/8" x 3 1/2" hose to extend fresh water cross pipe to clear the wider belt (only needed if Bowman Manifold is fitted.)
p/n T1.3750



Front crankshaft oil seal replacement as a precaution or in case the original seal is damaged during pulley removal.
p/n 0730098



Only for Westerbeke 40 with Balmar 621:
1" mounting foot: 2 x Bolts and spacers and crankshaft bolt - p/n 32162316
1 x crankshaft washer - p/n 33124119 (or equivalent)



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Metric bolt for 621 Balmar attaching adjusting arm.



Anti-Seize for threaded hardware.
Do not use on Main Crankshaft Bolt.



Water Pump Back Plate Gasket



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1. **Crankshaft Pulley Removal - The Hard Way:** There are 2 ways to do this, the easy way and the hard way. Hard way instructions first. By hand using a breaker bar on the retaining bolt. To do this you will have to stop the engine from rotating. This can be done by removing the starter motor and placing a pry bar between the ring gear teeth on the flywheel bell housing. Step one. Isolate the main battery lead connected to the starter. Step two. Remove the leads from the starter then remove the starter motor from the engine. This will expose the flywheel ring gear. With a pry bar, you can insert the bar between the teeth of the ring gear and the flywheel housing to stop the engine from turning when force is applied. A tire iron works well, standard thread "Lefty Lucy" 1½" standard socket for the 4.107 & 4.108. For the Westerbeke 40 1 1/8" socket. With the bolt removed, the old pulley should pull off quite easily using 2 hands.
2. **Crankshaft Pulley Removal - The Easy Way with Impact Wrench:** Use an Impact Wrench to remove the crankshaft pulley retaining bolt. "Lefty Lucy" standard thread. With the bolt removed the pulley should pull off quite easily by using two hands, pulling evenly on both sides. Do not pry against timing cover. This is a good opportunity to consider a precautionary replacement of the front oil seal as it is now fully exposed. One is included in the kit.
3. **Fitting the New Serpentine Pulley:** Check the key on the crank nose is in place and align the keyway on the new pulley. Fit the new serpentine crank pulley applying a smear of grease to the polished area on which the seal rides. It should go on by hand. Torque tension for the crank pulley retaining bolt is not super critical on a standard marine engine. If you have an additional forward PTO or shaft attached to the pulley torque to 190 ft lbs. In a standard configuration, its purpose is to retain the pulley which has belt side load only with no forward pressure on the bolt. Few people have access to a torque wrench that reads up to 190 ft lbs. If you are re torquing the bolt use the same method as removal in reverse. The torque setting is 190 ft lbs. If you are using a ½" drive impact wrench for re fitting of the retaining bolt. Set the impact wrench to tighten to max ensuring its capacity is less than 190 ft lb. With this method, we recommend some medium strength Loctite on the threads of the bolt. Threads should be free of oil for Loctite to be effective. If you are using a torque wrench the magic number is 190 ft lbs.

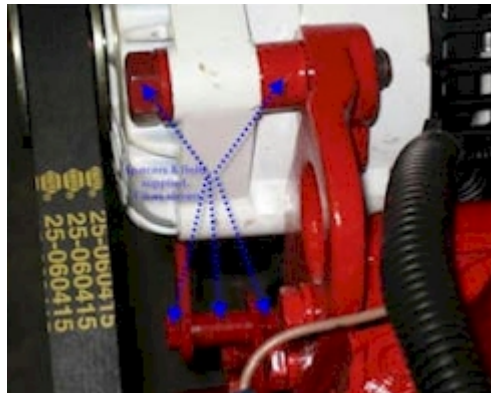
Westerbeke 40 Only:

Owners will receive a retaining bolt for the crank pulley bolt to fit in place of the original one. Tighten with 1½" socket or 5/8" 12-point Socket (Bolt head size subject to stock availability). Also included is belt tensioner bolt and spacer and a longer alternator mounting bolt and spacer. These items shown in the breakdown picture.



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The Westerbeke 40 requires some additional bolts and spacers to re-align alternator to be placed as shown above.



Water Pump with Pulley: Drain anti-freeze coolant. Remove the old fresh water circulating pump. Clean the gasket surfaces and fit the new water pump which will have the serpentine pulley already installed. (new gasket supplied). 4.108 Owners with the Bowman manifold. (as configured in blue, top of page, fit the short hose supplied to the Bowman manifold, this to bring the freshwater cross over pipe forward slightly to avoid contact with the new serpentine belt. This will replace the existing shorter hose. The extended hose only applies if you have a Bowman manifold.

Alternator Pulley: Replace the V pulley on the alternator with the serpentine pulley. An impact wrench works well for this. Some alternators have a provision in the end of the armature shaft for an allen wrench to hold armature from turning while tightening with an open wrench. Torque may vary according to your alternator manufacturer.



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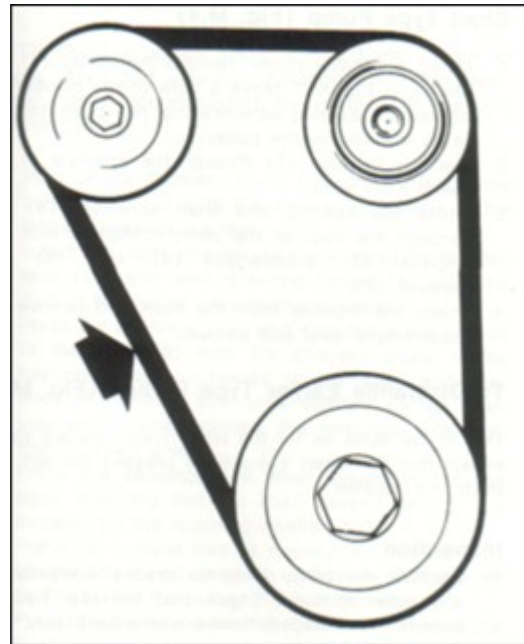
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Serpentine Belt & Tension: Fit the new serpentine belt. Tension should be adjusted using the original alternator adjusting arm so that, with normal thumb pressure, the belt can be depressed $\frac{3}{8}$ of an inch at the center of the longest span. (per fig 2)

NOTE:

The new belt will require re tightening after a few hours of operation. This check should be done while the engine and belt is warm. Continue to check tension until the new belt no longer stretches. Following this procedure, periodic checks should be made checking condition and tension.

Carry a spare!



Replacing Coolant: If you have not changed your coolant within the recommended period, this is a good time to do so. We suggest a good quality extended life ethylene glycol anti-freeze with corrosion protection and rust inhibitor. Once coolant is filled with a 50% 50% mix, approx. 6.6 qts., not including hot water heater, check for leaks. Be sure to vent the air from the system and monitor the fluid level and temperature carefully before and after engine comes up to working temperature. Caution: Do not remove cap to check level until engine has cooled down as the system will be under pressure and could cause burns.

Check the photos below to identify your current system and inform us when ordering.



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Figure 1 - 4.108 Bowman combined Header tank/heat exchanger/manifold
Shown in figure 1 is the 4.108 Bowman combined header tank, heat exchanger and exhaust manifold. This unit **WILL ACCEPT** our Serpentine Pulley Kit.

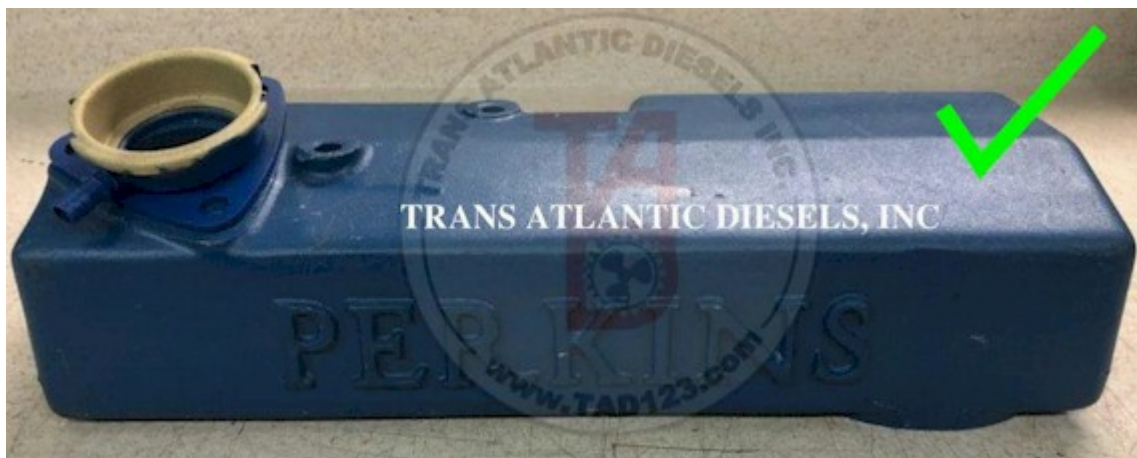


Figure 2 - 4.108 North American Front Tank
Shown in Figure 2 is the North American front tank as fitted to the 4.108. This configuration **WILL ACCEPT** our Serpentine Pulley Kit.



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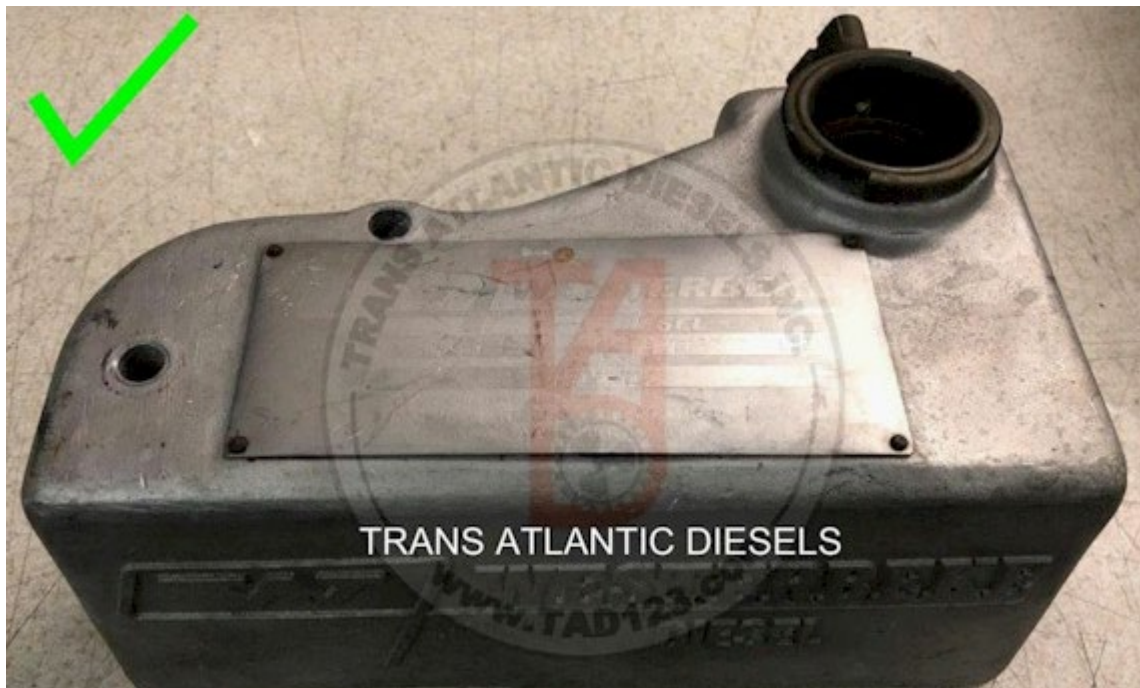


Figure 3 - Westerbeke 40 Front Tank

Shown in Figure 3 is the Westerbeke 40 Front Tank. This configuration **WILL ACCEPT** our Serpentine Pulley Kit.

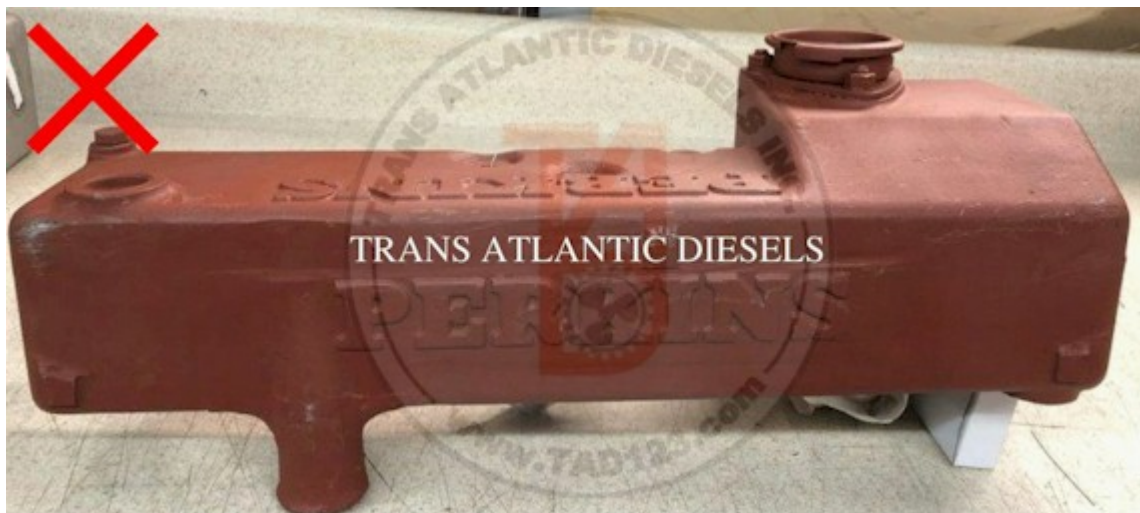


Figure 4 - Shows 4.108 Low Line Tank

Shown in Figure 4 is the 4.108 Low Line tank. This **WILL NOT ACCEPT** our Serpentine Pulley Kit without modification to the tank. Contact us for details.



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