



741225 High Volume Twin Cam 88 & 88B Engines Oil Pump Installation instructions

IMPORTANT NOTICE:

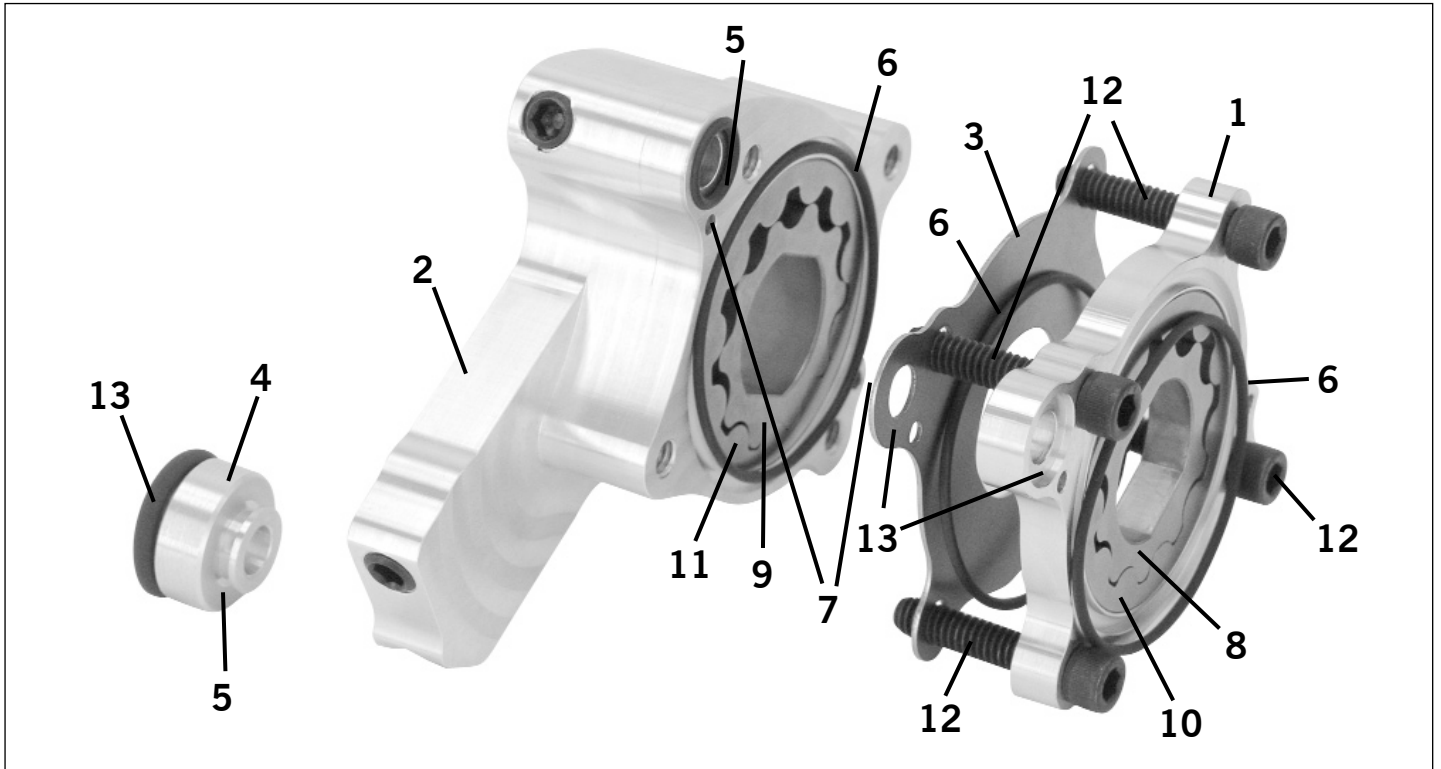
Installation of the TPD High Volume Pump must be done by a qualified mechanic. Installation requires a factory service manual and special tools.

The TPD High Volume Pump uses oversized, high-efficiency gerotor gear design, providing 40% more pumping volume and 60% more scavenging volume than the stock pump. The High Volume Pump eliminates "wet sumping" (thus related problems) and provides high volume oil flow for optimum lubrication and engine cooling.

CAUTION:

Incorrect installation may result in engine damage that is not covered under warranty. Failure to install components correctly can cause engine seizure. Engine seizure may result in serious injury to motorcycle, rider, passenger, and others.

1. Refer to the OEM service manual for removal of the cam plate, stock oil pump, cams, cam bearings, pressure relief valve and relief valve spring from the cam plate.
2. Wash and clean the cam plate and inspect it for scoring and cam bearing fit.
3. Measure the length of the stock pressure relief spring. Stretch spring to measure .050" longer than the stock length.
5. Re-install pressure relief valve and spring in cam plate according to OEM manual.
6. Install clean cam bearings and cams into cam plate. Refer to the OEM manual for assembly of stock cam chain drives system. Refer to gear drive camshaft installation instructions where applicable.
7. Check parts listing to make sure you have all the proper parts for the High Volume Pump.
8. Clean all parts of the High Volume Pump.
9. Assemble pump body (start with pressure pump housing), install large and small O-rings (pos. 5 & 6) into the proper grooves on both sides of pressure pump housing.
10. The O-rings supplied are the proper size. If may be required to gently stretch O-rings to fit in machined O-ring groove. Grease can be used to help hold the O-rings in proper position for installation.
11. Install the two dowel pins into pinholes of pressure pump housing to insure proper alignment of the pump housings.
12. Position separator plate over dowel pin
13. Install O-rings (pos. 5 & 6) into proper grooves on the separator plate side of the scavenge pump housing.
14. Apply engine assembly lube to the Gerotor gears and pump housings.
15. Install gears into proper housing.
16. Position scavenge pump housing onto dowel pins.
17. Install O-ring (pos. 5) onto the small end of the sub seal, install O-ring (pos. 14) on large end of sub seal.
18. Install the four oil pump bolts through the cam plate, then slide assembled pump housing over bolts with the pressure housing facing the cam plate.
19. Thread bolts (finger tight) into the threaded holes. DO NOT tighten yet!
20. Check O-rings for proper installation
21. Install the sub seal into scavenge housing.
22. Align the Gerotor gear flats with the crankshaft flats. Slide the assembly onto the crankshaft, using slight pressure slip sub seal into scavenge port hole of crankcase, at the same time wiggle assembly to align cam plate with dowel pin in case.
23. Tighten all cam plate bolts to 10 inch/lbs.
24. With pump bolts only finger tight, rotate engine over several times. This will help to align the Gerotors and pump housing to the crankshaft.
25. Tighten the four oil pump bolts to 10 inch/lbs.
26. Final torque on pump and cam plate bolts is 90-120 inch lbs.
27. Refer to OEM workshop manual for final assembly.



Pos.	Description	Qty.
1	Pressure Pump Housing	1
2	Scavenge Pump Housing	1
3	Separator Plate	1
4	Sub Seal	1
5	O-Ring	4
6	O-Ring	3
7	Dowel Pin, 1/8"x3/4"	2
8	Pressure Inner Rotor	1
9	Scavenge Inner Rotor	1
10	Pressure Outer Rotor	1
11	Scavenge Outer Rotor	1
12	Bolts 1/4"x11/4"	4
13	O-Ring	1

WARRANTY:

This TPD High Volume Pump is guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of twelve (12) months from the date of purchase. Merchandise that fails to conform to these conditions will be repaired or replaced at Zodiac's option. In the event warranty service is required, the original purchaser must notify Zodiac of the problem immediately. A part that is suspect of being defective must not be replaced without prior authorization from Zodiac. If it is deemed necessary for Zodiac to make an evaluation to determine whether the part was defective, it must be packaged properly to avoid further damage, and be returned prepaid to Zodiac with a copy of the

original invoice of purchase and a detailed letter outlining the nature of the problem, how the part was used and the circumstances at the time of failure. After an evaluation has been made by Zodiac and the part is found to be defective, repair, replacement or refund will be granted.

ADDITIONAL WARRANTY PROVISIONS:

Zodiac shall have no obligation in the event the part is modified by any other person or organization, or if another manufacturer's part is substituted for one provided by Zodiac. ZODIAC shall have no obligation if an ZODIAC part becomes defective in whole or in part as a result of improper installation, improper break-in or maintenance, improper use, abnormal operation, or any other misuse or mistreatment. ZODIAC shall not be liable for any consequential or incidental damages resulting from the failure of a ZODIAC part, the breach of any warranties, the failure to deliver, delay in delivery, delivery in nonconforming condition, or any other breach of contract or duty between ZODIAC and the customer. The installation of parts may void or otherwise adversely affect your factory warranty. It is the sole and exclusive responsibility of the user to determine the suitability of the product for his/her use, and the user shall assume all legal, personal injury risk and liability and all other obligations associated therewith. Our high performance parts, engines and motorcycles are intended for experienced riders only.

ZODIAC RECOMMENDS THE USE OF TOP-QUALITY SPECTRO MOTORCYCLE ENGINE OIL