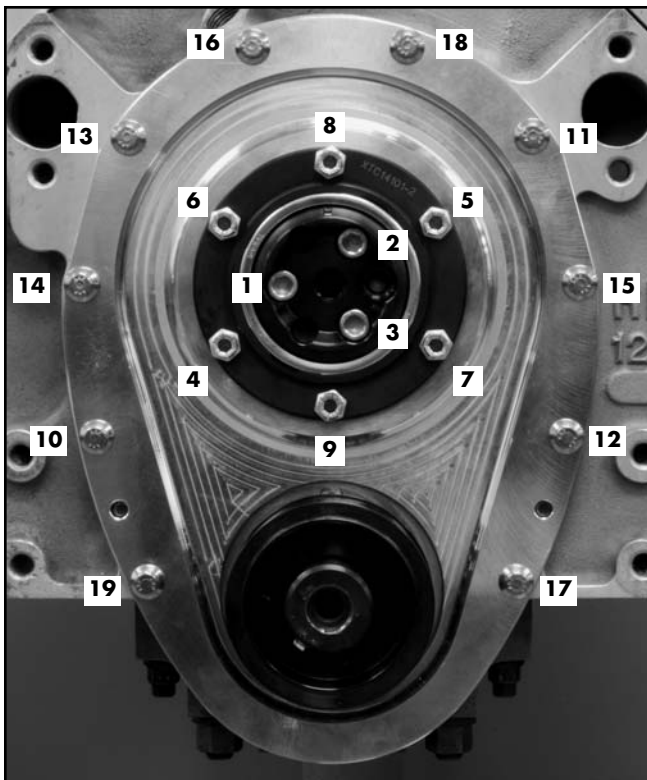


BILL OF MATERIALS

Part #	Quantity	Description
BLTAC.750A	10	12-point bolt 1/4 - 20 x 3/4"
BLTBC.750C	3	Camshaft bolt (5/16 -24 x .750")
CVNSP 1054A	1	Cam seal with single lip
CVNSP 1055A	1	Crankshaft seal
XTC10101	1	SBC billet back cover, STD cam, SBC snout, grooved rail
XTC11000	1	SBC cam pulley, STD cam, 56-tooth
XTC12001	1	Crankshaft pulley, SBC, 28-tooth
XTC13101	1	SBC cam spider, STD cam for 56-tooth pulleys
XTC14100-1	1	Thrust washer (2.950" x 2.260" x .032")
XTC14100-2	1	Thrust washer (2.950" x 1.878" x .032")
XTC14101-1	1	Cam adapter hat
XTC14101-2	1	SBC seal plate
XTC150040	3	Button head cap screw, 8-32 x .187
XTC15010	1	Timing hub bolt (7/16 -20 LH)
XTC15011	1	Spider retaining washer
XTC15012	1	Woodruff key, 1/8" x 1/2"
XTC15013	6	Flexlock nut, thin, 1/4 - 20
XTC15014	1	Shim (.005")
XTC15015	2	Shim (.010")
XTC15020	6	ARP press-in stud for all XTC billet back covers
XTC15031	4	Low-head socket head cap screw 5/16 - 24 x 3/4"
XTC15037	4	ARP 12-point flange nuts 5/16 - 24
XTC16005	1	O-ring for billet back cover
XTC18000	1	Timing belt



TORQUING SEQUENCE

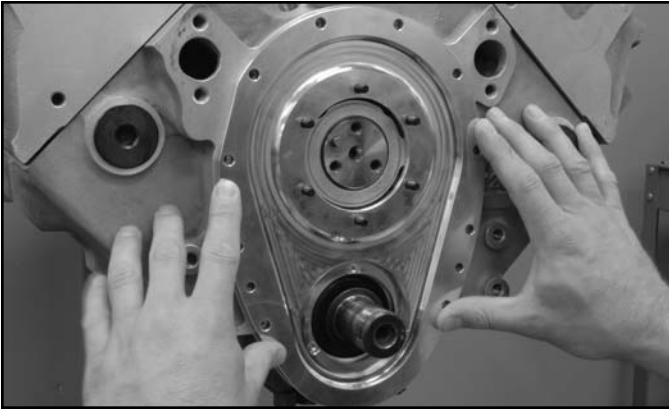
Bolts 1-3: Thrust bearing to camshaft, 28 lbs/ft with Red Loctite
Nuts 4-9: Thrust bearing to back cover, 10 lbs/ft, no threadlocker
Bolts 10-19: Back cover to block, 10 lbs/ft Blue Loctite

OPTIONAL ACCESSORIES

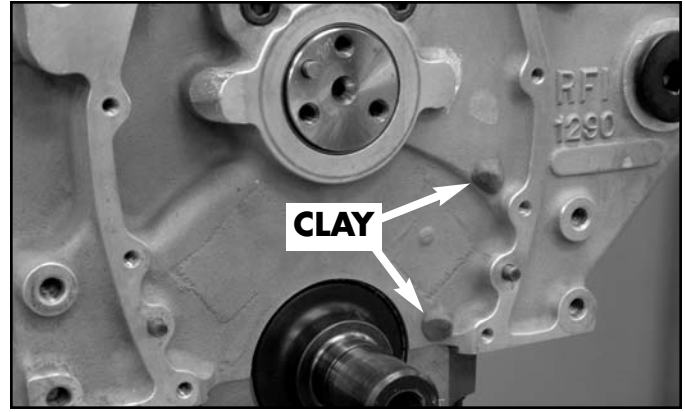
Part #	Description
BLP6078-010	Rear shim ¹ , .010"
BLP6078-015	Rear shim ¹ , .015"
BLP6078-020	Rear shim ¹ , .020"
XTC19000	Stamped aluminum dust cover
XTC19002	Fabricated aluminum dust cover
XTC19005	Billet aluminum dust cover
Varies by application	Timing pointer
Varies by application	Water pump spacer
CVT-CD1	Cam seal installation tool
CVT-CD2	Crank pulley installation tool
CVT-CD3	Cam drive spanner

NOTES:

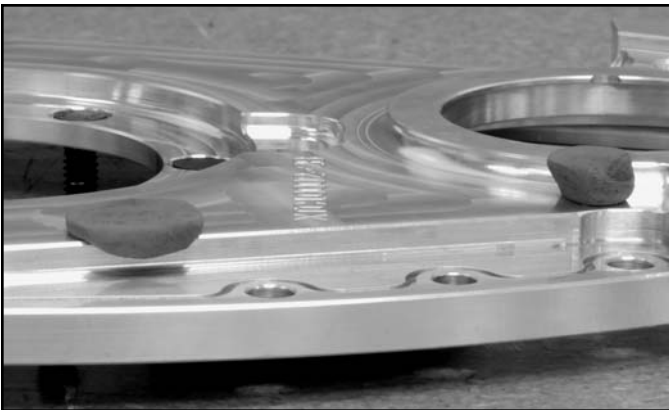
1 - Moves cam rearward, away from front of engine



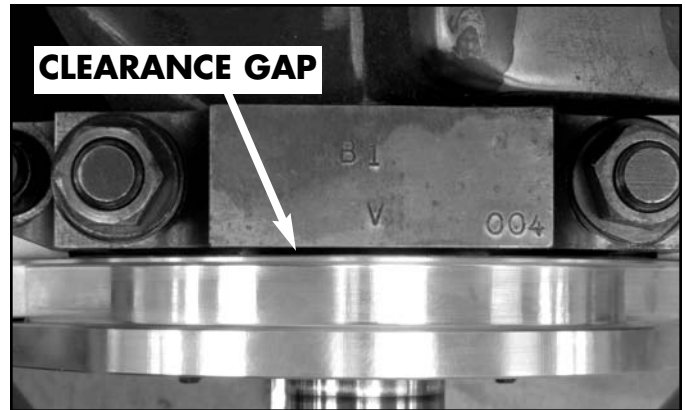
STEP 1: To begin, trial-fit the billet back cover to your engine block. Tolerances will vary between aftermarket block manufacturers, so some clearancing of the block may be necessary. Should this be the case with your engine, remove material from the block **NOT** from the back cover.



STEP 2: Next, check for clearance between the back cover and engine block to allow proper oil drainback. Place a small piece of clay on the highest points on the block as shown here (for example only, block designs will vary).



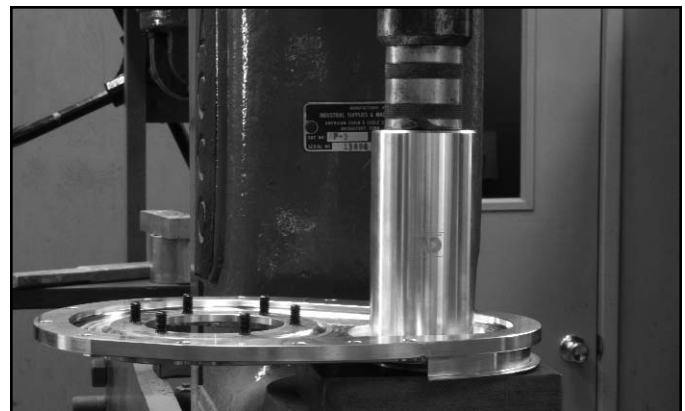
STEP 3: Place the back cover on the block and press against the clay. Remove the cover and inspect the clay to determine the amount of clearance between your block and the cover. Should you need to add clearance, remove material from the block **NOT** from the back cover.



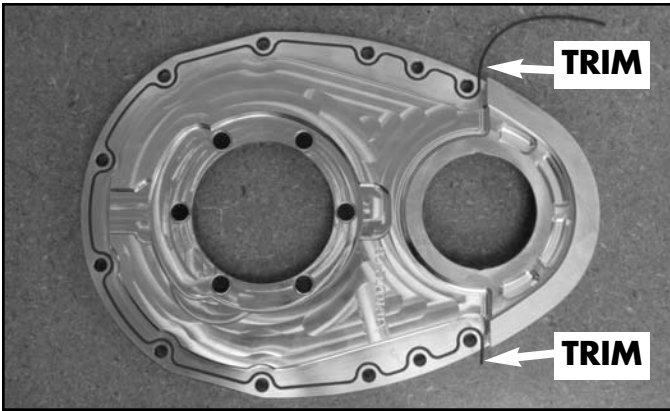
STEP 4: Proper oil drainback also depends on some clearance between the front main cap and back cover. Any amount of clearance is acceptable, such as shown here. Should you need to add clearance, ball mill a vertical slot in the main cap, **NOT** from the back cover.



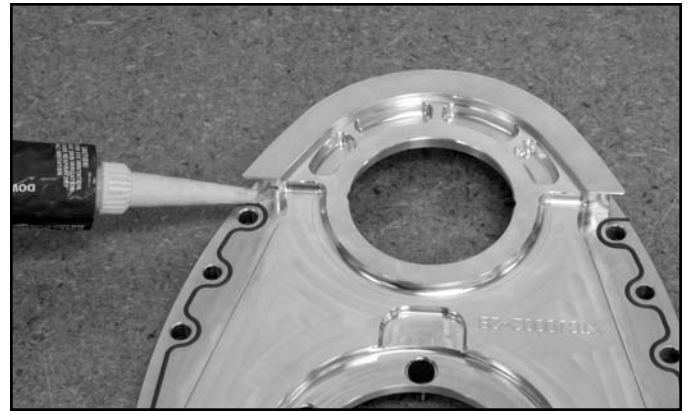
STEP 5: Prior to installing the crankshaft seal, apply a thin, uniform coating of Loctite 272 Red to the outside diameter of the seal.



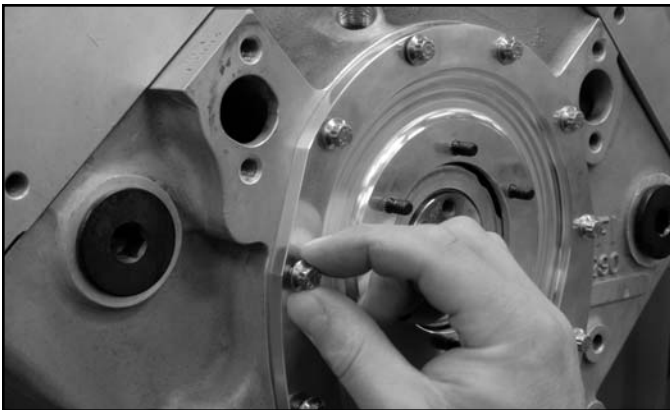
STEP 6: Press the crankshaft seal into the back cover using optional seal installer or similar tool. Finish the seal installation by screwing in the 3 button head cap screws provided in this kit using Loctite 242 Blue on the threads.



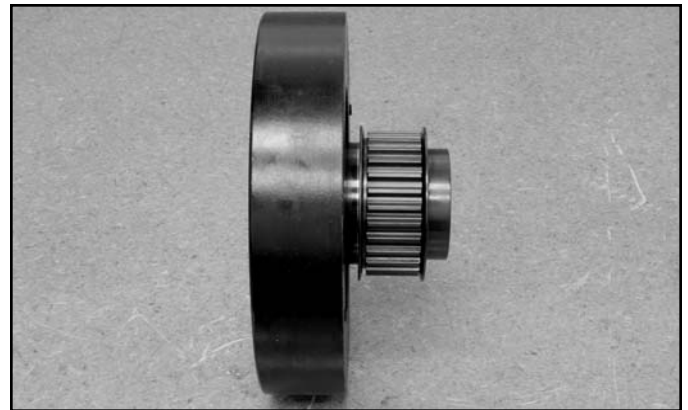
STEP 7: Work the o-ring cord into the dovetail groove on the back side of the cover as shown here. Trim off the excess cord flush with the end of the cover. **NOTE:** Do not use silicone sealer except as directed in **STEP 8**.



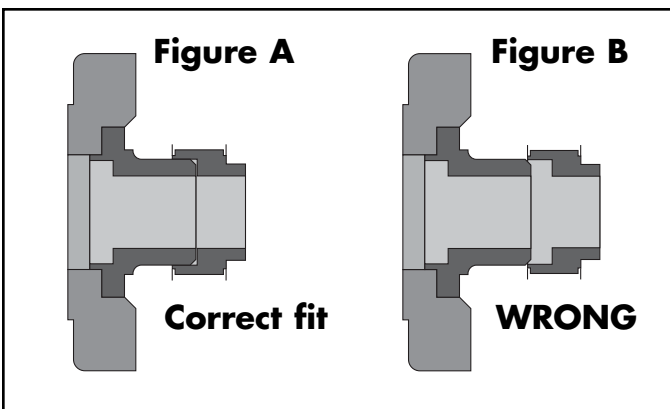
STEP 8: Apply a thin bead of silicone along the cover as shown. The bead should go from the o-ring to the pan seal flange.



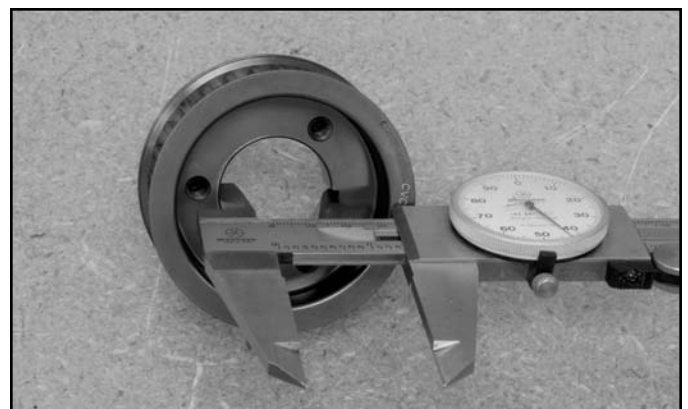
STEP 9: Install the back cover using the $\frac{1}{4}$ - 20 12-point bolts provided in this kit. Bolts should only be finger tight at this step. This cover is o-ring sealed, **DO NOT** use a gasket when installing this cover.



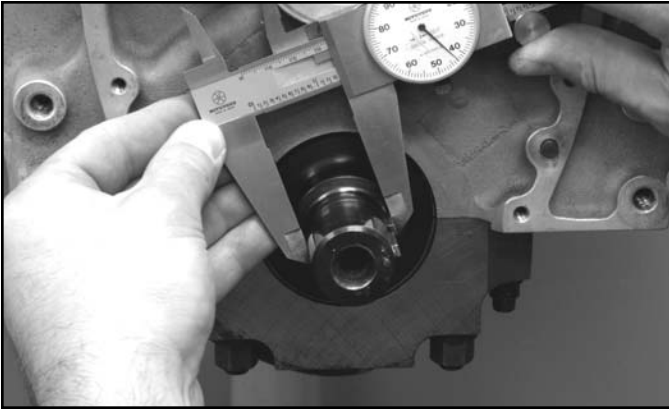
STEP 10: The crankshaft pulley should freely slide over and bottom out on your balancer hub. Due to varying tolerances between manufacturers, it is highly recommended that this fit is checked prior to installation of the belt drive.



STEP 11: Should there be any interference in the fit of the balancer hub (shown in Figure B, exaggerated for detail) the hub OD will need to be polished or machined accordingly. Fit should be 'slip-on' with no resistance as shown in Figure A



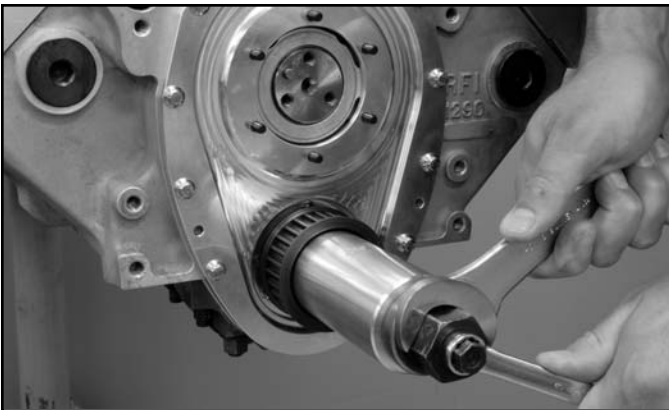
STEP 12: Prior to installing the crankshaft pulley, measure from the ID to the depth of the keyway as shown. Record this number.



STEP 13: Now measure the crankshaft snout from the OD to the drive key as shown. If this measurement is larger than the measurement taken in **STEP 12**, file down the key and re-measure. Failure to verify these measurements could result in severe damage to the crankshaft pulley and/or crankshaft snout.



STEP 14: Using your thumb or finger trace the ID of the seal while applying mild pressure. This relaxes the seal allowing for easier installation of the crankshaft pulley.



STEP 15: Install the crankshaft pulley using a balancer installation tool in conjunction with optional tool as shown. **DO NOT install the crankshaft pulley with a hammer or other such tool.** Verify that the crankshaft pulley does not hit the three button head cap screws used to retain the seal as mentioned in **STEP 6**.



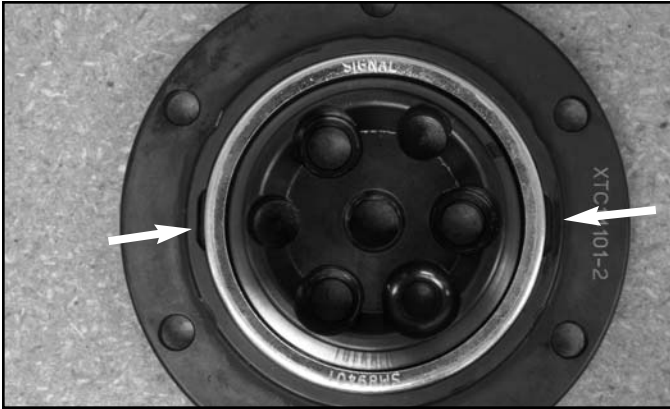
STEP 16: Prior to assembling the cam thrust bearing assembly, place the large I.D. copper thrust washer over the adaptor hat as shown.



STEP 17: Prior to installing the camshaft seal, apply a thin, uniform coating of Loctite 272 Red to the outside diameter of the seal.



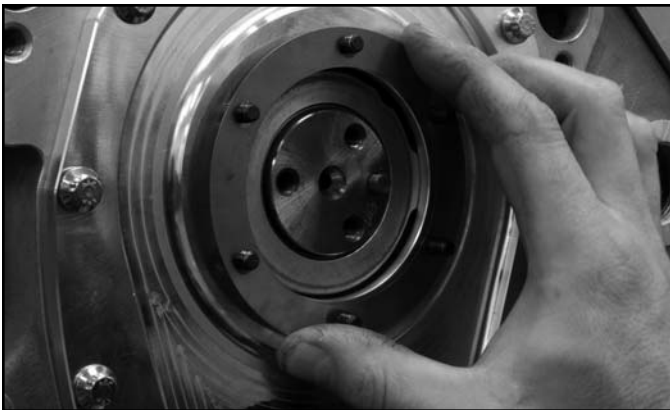
STEP 18: Place the seal plate and seal over the adaptor hat as shown here. Apply a thin film of Red Loctite around the OD of the seal and press in place using optional tool #CVT-CD1 (**INSET**) until the seal is flush.



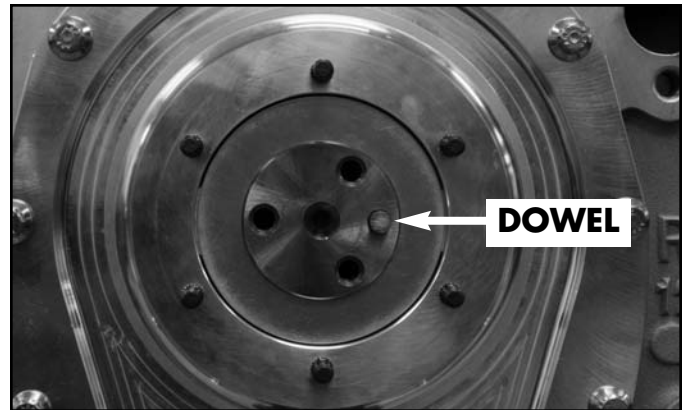
STEP 19: Fill the two notches in the cam thrust bearing assembly with silicone (**ARROWS**). These notches allow removal of the cam seal for maintenance and must be sealed prior to use. **NOTE - Replace thrust bearing assembly when camshaft end-play exceeds .010".**



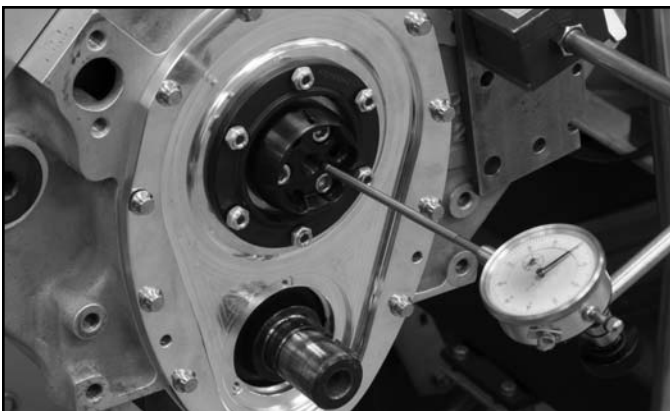
STEP 20: Prior to installing the camshaft drive hub assembly, the second copper thrust washer **MUST** be installed over the camshaft as shown. Use a small amount of grease on the back side of the washer to "stick" it to the engine. This will not affect your thrust reading.



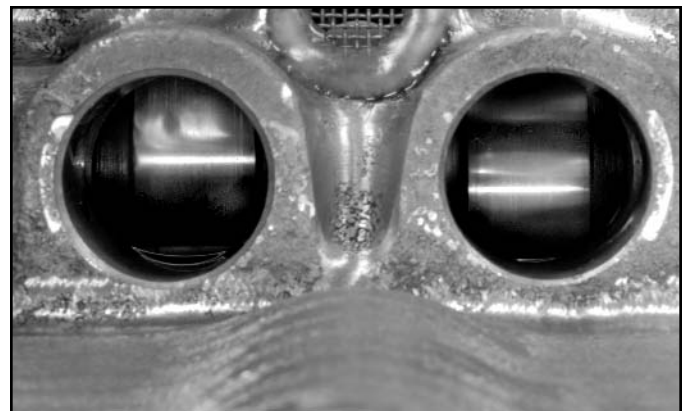
STEP 21: Camshaft end play must be checked before the camshaft thrust bearing assembly is permanently installed. One .005" and two .010" shims are provided in this kit for this purpose. It is recommended to use one of the .010" shims as a starting point prior to checking cam end play. Install as shown.



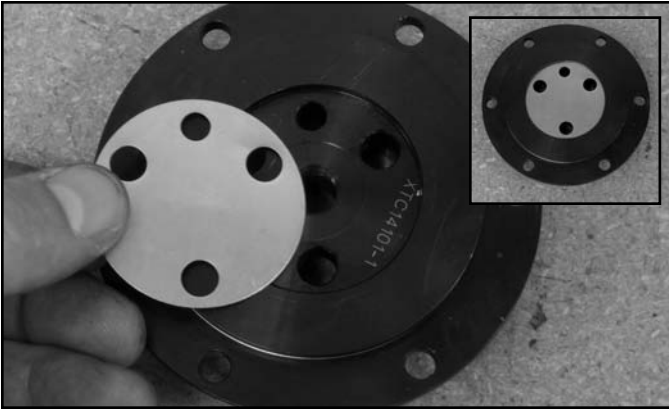
STEP 22: Before the camshaft thrust bearing assembly is installed, rotate the camshaft until the dowel pin is in the 3 o'clock position.



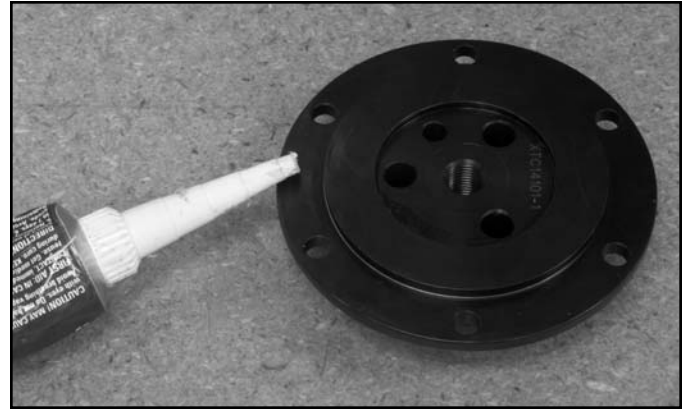
STEP 23: If the desired end play is not achieved using the .010" shim provided in this kit, add shims accordingly and re-verify end play. Once this is achieved, a thin film of silicone sealant must be applied between all shims, the billet cover and the cam drive prior to final assembly making sure to avoid contact with the thrust washer.



STEP 24: Verify camshaft alignment at this step. Alignment shims are available separately to move the cam back, towards the rear of the engine in .010", .015" and .020" increments. Shims are available to move the cam forward in .010" increments. See front page of these instructions for ordering information.



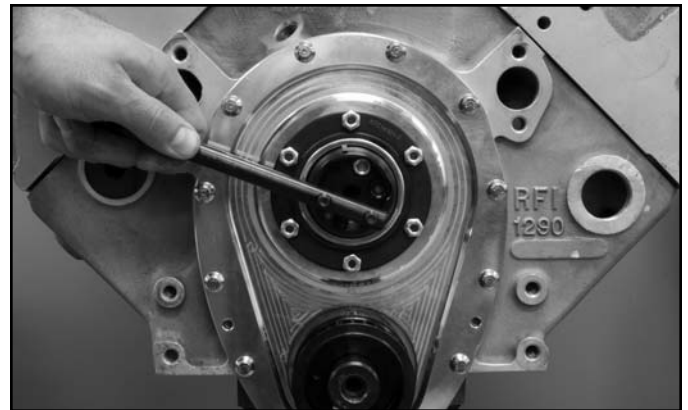
STEP 25: Should the cam require rearward spacing (away from the front of the engine) install the alignment shim(s) as shown and make sure that all holes in the shim(s) align with all holes in the cam drive hub (**INSET**).



STEP 26: Apply a thin bead of silicone to the flange of the camshaft seal plate and smooth it out evenly with your finger.



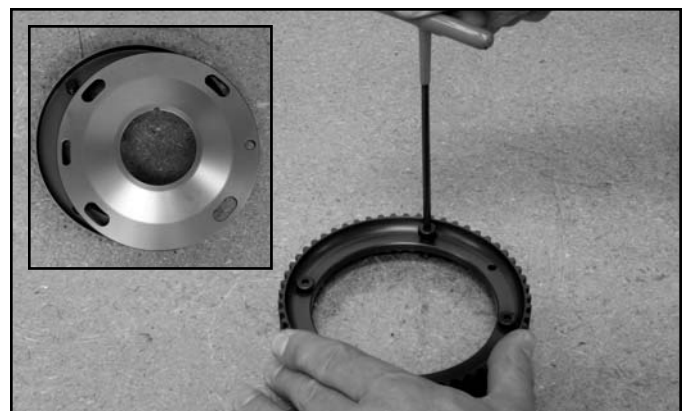
STEP 27: Place the camshaft thrust bearing assembly on the back cover. Install the three $\frac{5}{16}$ - 18 socket head cap screws in the cam, then the six outer locknuts on the back cover studs as shown. Cam bolts and lock nuts should only be finger tight at this step.



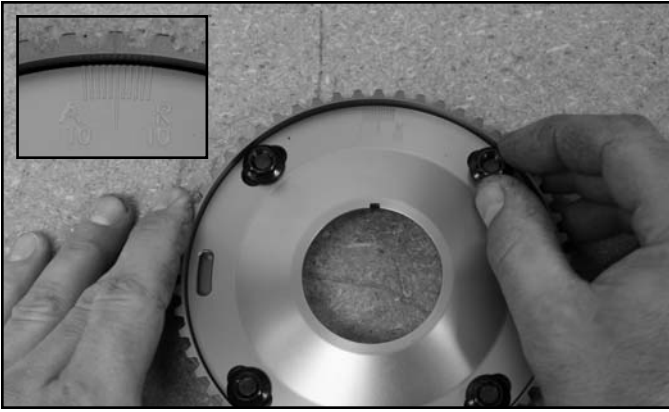
STEP 28: Follow the torquing sequence shown on the front page of these instructions and tighten all bolts and nuts in order, then repeat the procedure torquing them to the values listed. **IMPORTANT** - Using the optional spanner, #CVT-CD3 rotate the camshaft while tightening/torquing **EACH** bolt and nut.



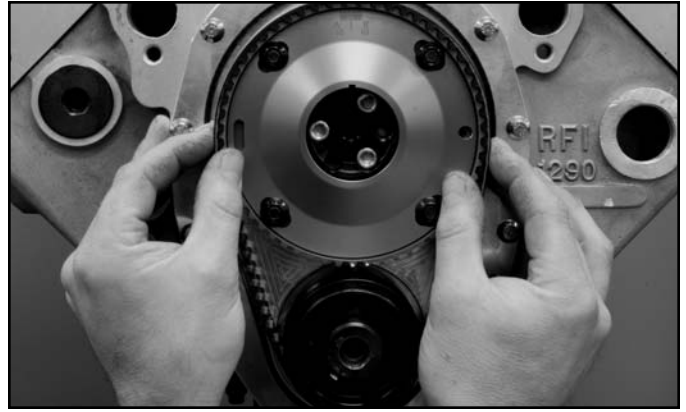
STEP 29: Using a small punch or brass drift and a small hammer, install the Woodruff key into the hub of the cam thrust bearing assembly. The key should be seated evenly against the bottom of the keyway slot.



STEP 30: FOR KITS WITH PRE-INSTALLED CAM PULLEY STUDS, GO TO STEP 31 Apply a drop of Loctite 242 Blue to the threads of the four cam pulley studs and thread them into the back side of the cam pulley. The back side has spotfaces around each hole. The advance/retard marks are on the front side of the cam pulley (**INSET**).



STEP 31: Place the spider over the studs in the cam pulley and thread the ARP 12-point nuts in place by hand. Make sure that the center degree line on the spider lines up with the mark on the cam pulley (**INSET**).



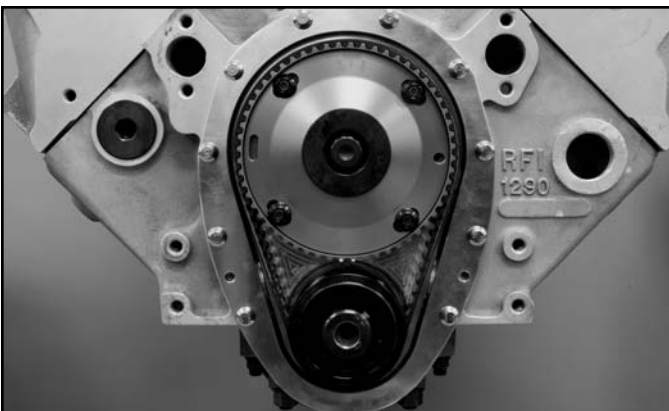
STEP 32: NOTE - For kits with idler bearings, stack the bearing spacer, idler bearing and washer onto the idler stud. Install the supplied 12-point nut and torque to 18 lbs-ft. - Set the cam pulley on top of the crankshaft pulley. Now slip the belt over the crankshaft pulley and over the camshaft pulley to install the belt.



STEP 33: Align the timing marks on both pulleys so that the mark on the crank pulley is between the two marks on the cam pulley. **NOTE -** Kits with idler bearings will have only one mark on the cam pulley. In this case, align the single mark on each pulley directly in line with each other.



STEP 34: Place the camshaft pulley on to the camshaft thrust bearing assembly allowing the taper of the bearing hub to pull the camshaft pulley into position. Make certain not to dislodge the Woodruff key during this step. Install the special ARP left-hand thread retaining bolt and washer using ARP thread lube and torque to 70 lbsft.



STEP 35: The timing marks on each pulley are for installation reference only. The cam must now be properly degreed. Once this is completed, apply Blue Loctite to the threads of each cam pulley stud and torque each of the four ARP 12-point nuts to 18 lbs-ft. Installation is complete.

NOTE: For installation of optional accessories such as outer dust cover, adjustable timing pointer or water pump spacers, please **SEE PAGE 8**.



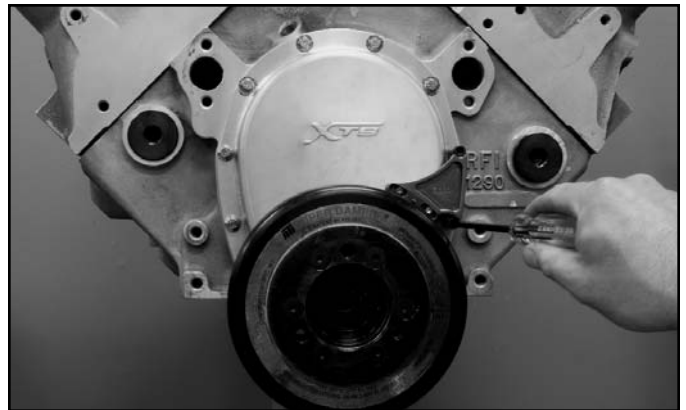
STEP 36 (OPTIONAL): To install the optional stamped or fabricated dust cover, choose 4 of the 10 back cover mounting bolts. In this manner, only 4 bolts have to be removed to install (or later remove) the cover. Mark the 6 bolt holes on the cover that will not be used as shown.



STEP 37 (OPTIONAL): The 6 marked bolt holes in the cover must be drilled out to $\frac{1}{2}$ " to allow the cover to clear the heads of the back cover bolts. Clamp the cover in a drill press or mill and drill out the holes in increments of $\frac{3}{8}$ ", $\frac{7}{16}$ " then $\frac{1}{2}$ ".



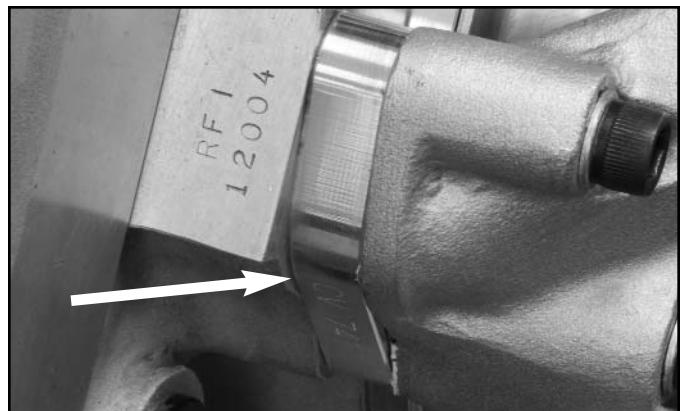
STEP 38 (OPTIONAL): NOTE - Deburr the 6 enlarged holes, wash the cover in solvent, dry and install. Torque the 4 mounting bolts to 96lbs/in using Loctite 242 Blue threadlocker. **NOTE** - A gasket may be necessary to provide proper clearance between the front cover and the cam drive.



STEP 39 (OPTIONAL): To install the optional timing pointer, remove two of the bolts used to attach the back cover to the engine block. The mounting screws included with the pointer may be too short to use with the Xceldyne belt drive. If this is the case, substitute them for $\frac{1}{4}$ "-20 x 2" socket head cap screws and install using Loctite 242 Blue threadlocker.



STEP 40 (OPTIONAL): Torque the socket head cap screws to 96 lbs/in. Set TDC as necessary. Several timing pointers are available to cover a wide range of dampers (see the front page of these instructions).



STEP 41 (OPTIONAL): Water pump spacers are available in a variety of thicknesses to provide clearance between the back of the water pump and the belt drive's dust cover.