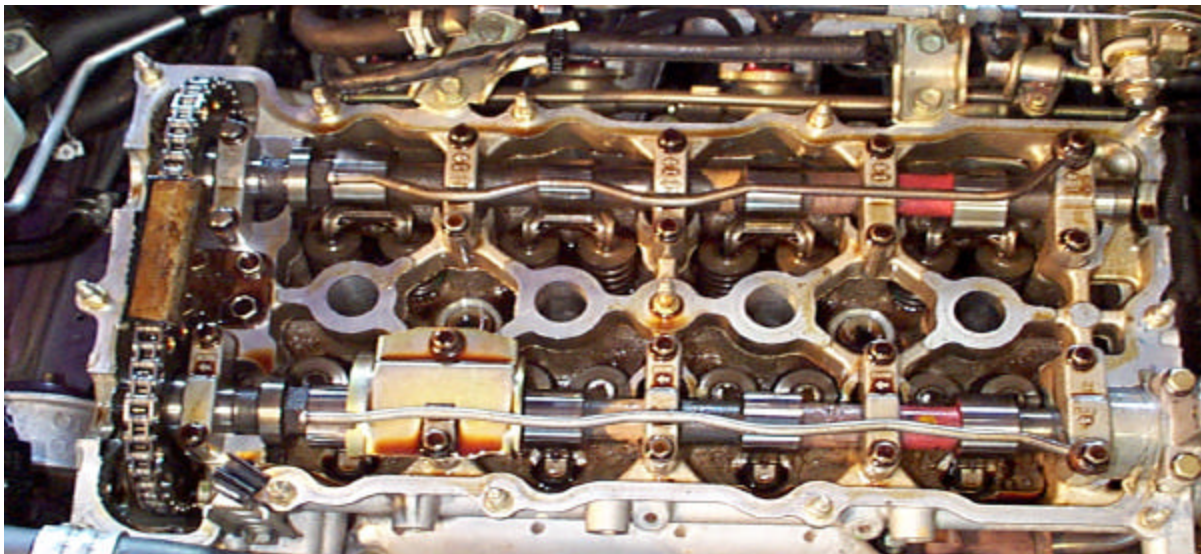
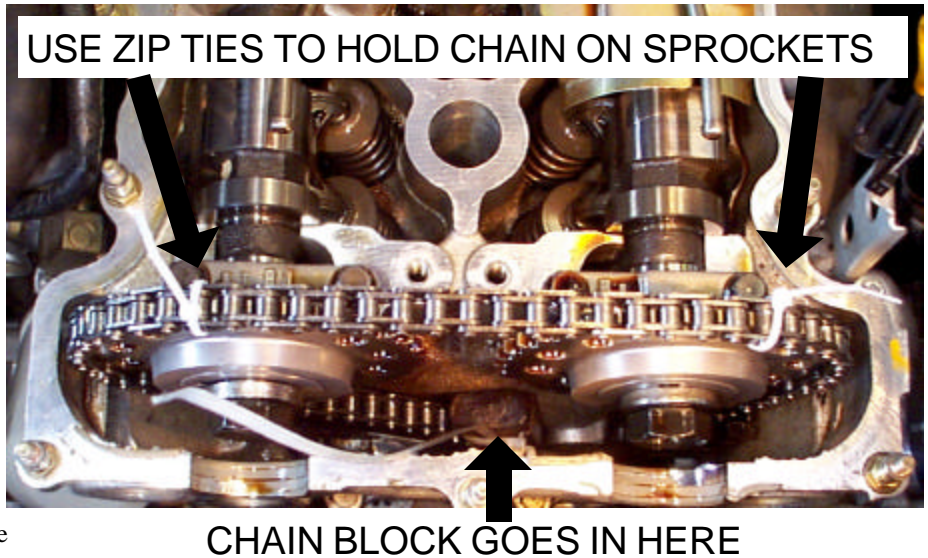


SR20 CAMSHAFT INSTALLATION

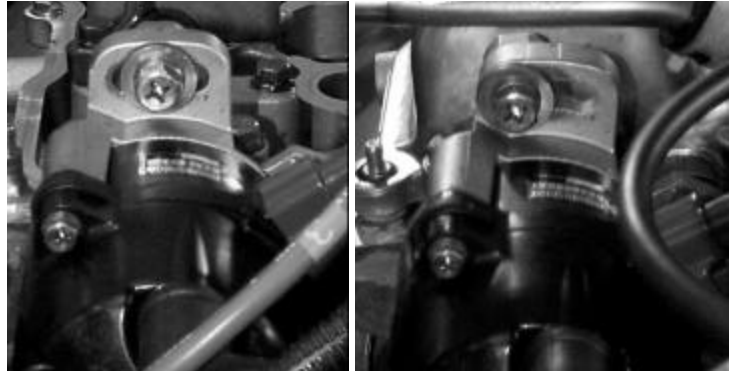
1. It is highly recommended that an oil and filter change be done before installing new cams.
2. Remove the distributor, plug wires, and valve cover from the engine. Use caution not to drop anything into the engine.
3. With the parking brake on, and the car out of gear (neutral), rotate the crankshaft clockwise until #1 cylinder is at TDC (top dead center) with all of it's valve closed. To insure that this is correct, look at the crank pulley (TDC is the second mark from the left, it will be marked with yellow paint). Also check that the cam lobes on #1 cylinder are pointing **away** from the center of the motor, if the are pointing toward the center, rotate the motor one full rotation clockwise. Again check the crank pulley to see that it is on TDC.
4. Before removing the cam sprockets, the sprocket bolts must be loosened. Using a 24 M.M. (15/16ths") wrench or socket on the bolt and a 1" open end wrench on the cam hex (in front of the front lobe), break loose but don't remove the bolts. Use plastic zip ties to secure the chain to the sprockets so the chain cannot leave it's proper timing position to the sprockets. It is impossible for the chain to jump on the crankshaft sprocket because their isn't enough room between the sprocket and cover.
5. The chain tensioner can either be removed, compressed and locked, or blocked in place. To remove it or comp res and lock it, refer to the factory manual. To "block" it, cut a "chain block" as described in the illustration, out of 1/2" thick wood and add a zip tie to facilitate removal from the engine. This chain block is installed between the chain on the intake side and the aluminum protrusion in the block (see illustration). Push the chain block in firmly with your fingers (use no more pressure than your fingers to avoid damage to the chain rail).
6. Remove the upper chain guide above the cam sprockets. Remove the previously loosened cam sprocket bolts and pull the sprockets away from the cams. Let the chain/sprockets lay relaxed away from the cams until ready to assemble to the new cams. Note the positions of the dowel pin on each cam, the new cams must be installed at the same positions.
7. Mark the cam bearing caps 1 through 5 on both the intake and exhaust sides and note the arrows are pointing to the front of the motor. Evenly remove the bearing caps one turn of each bolt at a time until all are free of tension. Remove the bearing caps and place them in a clean area in the same order they are removed. Remove the old cams, caution should be taken to insure that they don't bind on the thrust surfaces of the first journal (this is also critical when installing the new cams). Check to see that all of the cam followers and lash pads are still in place on the



valve.

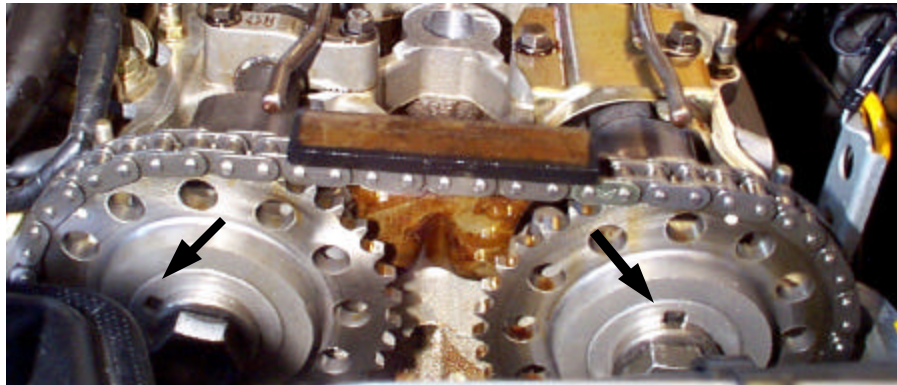
8. Although the new cams have been fully inspected, they must be final cleaned and checked for any damage or burrs that may have occurred during shipping or handling. A coat of assembly lube or motor oil should be applied to all journals and lobes. Install the cams (the one with the distributor drive slot goes on the exhaust side) with the sprocket dowel pins in the same position as the old cams.
9. Reinstall all of the bearing caps, oilers and baffle. A thin coat of silicone sealant should be applied to the last bearing cap of the exhaust cam, on the parting line area that holds the distributor. Evenly tighten 1/2 turn on each bolt until all of the caps are snug (1.4 ft-lb and again to 4.3 ft-lb). Then final torque the bolts from the center bolts outward to 6.7 to 8.7 ft-lb for all of the bolts with a 10 M.M. head. The 2 larger bolts (12M.M. head) closest the distributor are torqued to 13 to 19 ft-lb.
10. Attach the sprockets to the new cams and screw the bolts in by hand. If you have positioned the cams dowels correctly, only a slight rotation of the cams will be needed to engage the dowel and sprocket. Check to see that the sprocket is fully seated against the cam before torquing the bolt tight. Always use a 1" wrench on the cam hex to back up your torque wrench (never use the chain for resistance)! Torque the cam sprocket bolts to 101 to 116 ft-lb. Remove the zip ties from the chain and pull the chain block from the chain cover. Reinstall the upper chain rail.
11. Inspect your work carefully looking for any rockers or lash pads that may not be properly placed or any parts not correctly installed. Recheck the cam timing, the crank should be on the TDC mark, the exhaust cam dowel should be at 12 o'clock and the intake cam dowel should be at 10 o'clock.
12. Reinstall the valve cover, distributor and wires. Torque the valve cover bolts first to 2.9 ft-lb and then to 5.8 to 7.2 ft-lb
13. Set the ignition timing to factory spec. and lock the distributor. If the distributor position after setting the timing, is not in the center, you probably have the cam timing one tooth off (see illustration).
14. Break-in should consist of 10-15 minutes of 1500 – 2000 RPM and 50-100 miles of varied RPM below 4000 RPM.

**DISTRIBUTOR POSITION IS IN CENTER
IF CAM AND IGNITION TIMING IS CORRECT**



CORRECT

WRONG



**NOTE THE DOWEL PIN LOCATIONS
INTAKE = 10 O'CLOCK EXH. = 12 O'CLOCK**

