

TIMING CHAIN

CAUTION: If camshaft or crankshaft is rotated with timing chain disconnected, piston will contact valves, resulting in bent valves.

NOTE: For reassembly reference, apply paint marks to timing chain and camshaft sprockets before removing.

Removal

1. Release fuel pressure. See **FUEL PRESSURE RELEASE** . Drain coolant from radiator and cylinder block (drain plug is on left side of block, between flywheel and exhaust manifold). Remove accessory drive belts and power steering pump bracket. Remove intake air duct. Remove right front wheel and splash shield.
2. Remove engine undercovers. Remove front exhaust pipe. Remove front engine mount from cylinder head. Remove cylinder head cover, distributor cap and spark plugs. Remove intake manifold support. Set piston No. 1 at TDC of compression stroke. For installation reference, mark rotor in relation to distributor housing and distributor housing in relation to cylinder head. Remove distributor.
3. Remove cylinder head front cover. See **Fig. 4** . Remove water pump pulley and thermostat housing. Remove chain tensioner and guide. See **Fig. 6** . Loosen idler sprocket bolt. Remove camshaft sprockets. Remove idler sprocket bolt. Remove cylinder head bolts in 2 steps, in sequence. See **Fig. 5** . Remove cylinder head with manifolds. Remove idler sprocket shaft from rear side. Remove outer (upper) timing chain.
4. Remove crossmember and rear engine mount. Remove oil pan and strainer. Remove crankshaft pulley. Support engine using a jack. Remove front engine mount. Remove front cover bolts (one of these bolts retains water pump and front cover). Remove front cover. Remove idler sprocket, inner (lower) timing chain and oil pump drive spacer. Remove chain guides and crankshaft sprocket.

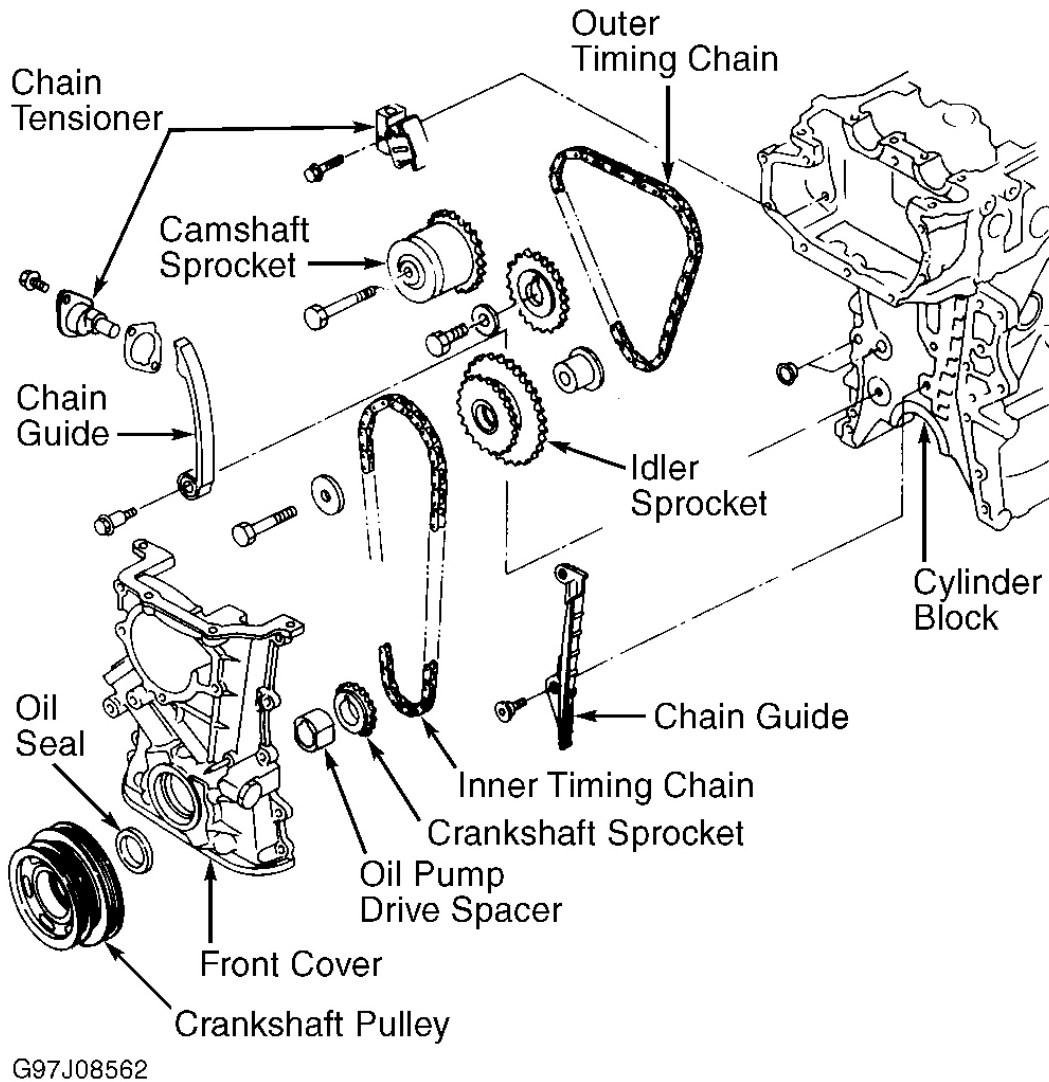
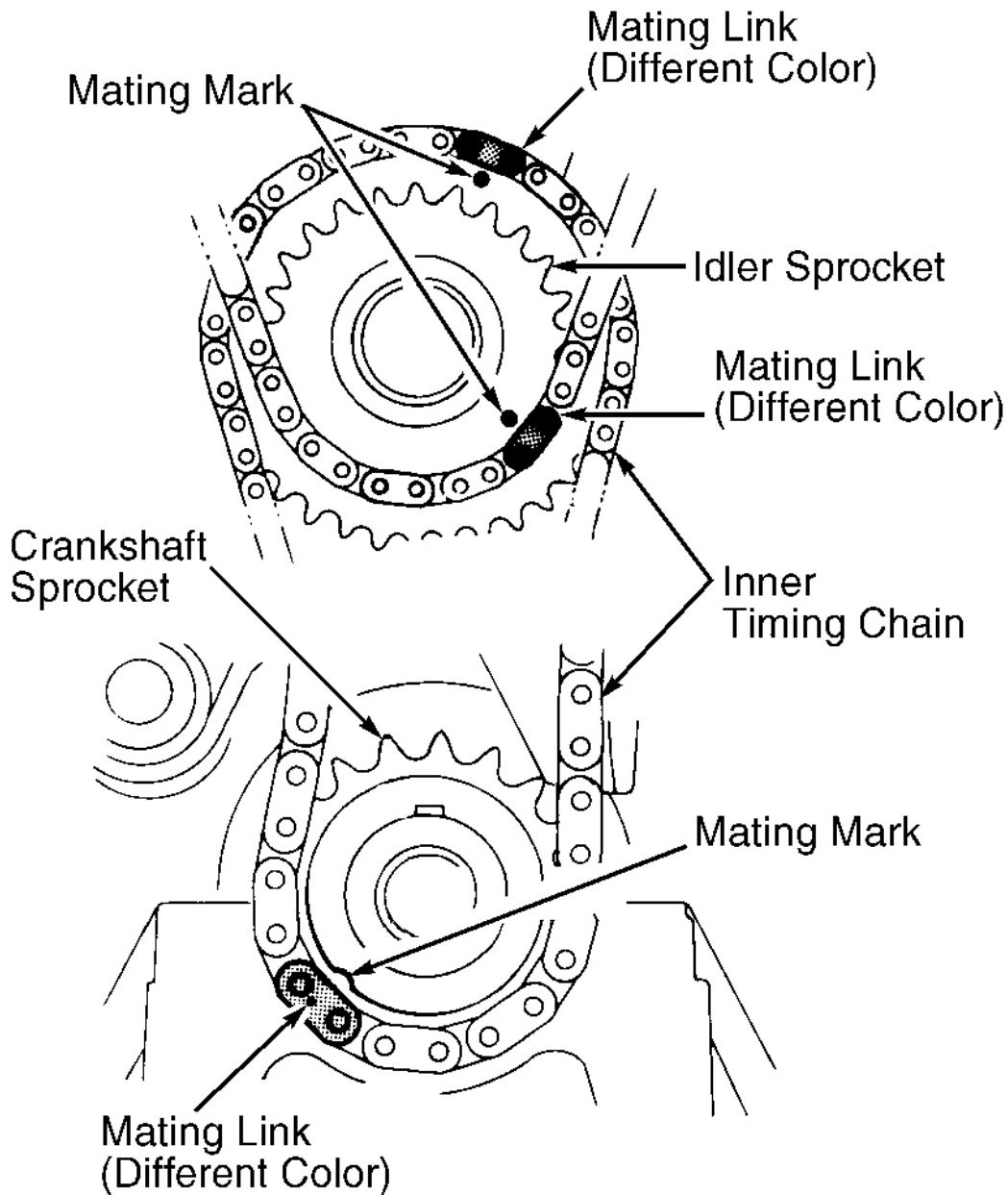


Fig. 6: Exploded View Of Timing Chain Components
 Courtesy of NISSAN MOTOR CO., U.S.A.

Installation

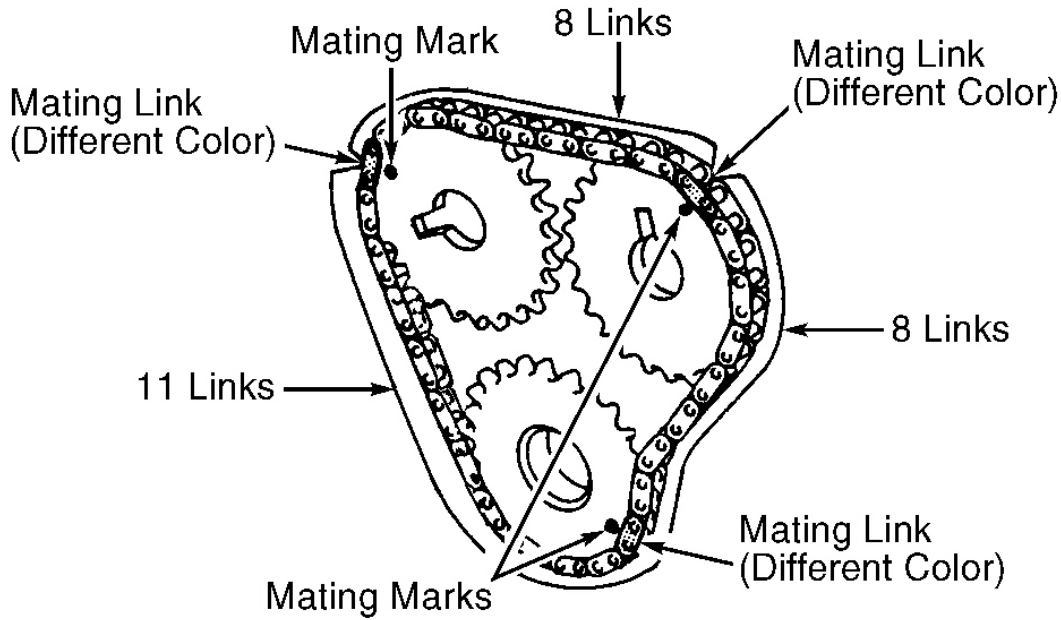
1. Ensure cylinder No. 1 is at TDC of compression stroke. Install chain guides, crankshaft sprocket and inner timing chain. Align inner timing chain mating link (different color link) with marks on crankshaft sprocket. See [Fig. 7](#).
2. Apply liquid gasket to front cover. Ensure 2 "O" rings are in place on front cover. Install oil pump drive spacer, front cover and oil pan. Install front engine mount, crossmember and crankshaft pulley. Install idler sprocket with outer timing chain. Align inner timing chain mating link (different color link) with marks on idler sprocket. See [Fig. 7](#).
3. Install idler sprocket shaft from rear. Install camshaft sprocket with outer timing chain. Align outer timing

chain mating marks with marks on camshaft sprocket. See **Fig. 8** . To complete installation, reverse removal procedure. Tighten all nuts and bolts to specification. See **TORQUE SPECIFICATIONS** .



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Fig. 7: Aligning Inner Timing Chain Marks
Courtesy of NISSAN MOTOR CO., U.S.A.



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Fig. 8: Aligning Outer Timing Chain Marks
Courtesy of NISSAN MOTOR CO., U.S.A.