

INSTALLATION

1. Insert cardboard or similar material in air space between generator armature and field poles.
2. Attach slings and mount generator on the crankshaft flange fit, lining up the armature flange with the crankshaft flange dowel. A couple of threaded studs screwed into two generator flange holes help assembly considerably.
3. Apply coupling bolts and washers.
4. Apply shims, dowels and cap screws that secure the generator to the cylinder block.
5. Remove cardboard strips from space between armature and field poles.
6. Tighten the bolts securing the generator to the cylinder block and base to 1150 ft. lbs. torque.
7. Tighten coupling bolts to 850 ft. -lbs. torque and lockwire.
8. Check crankshaft deflection.

CRANKSHAFT DEFLECTION

Check the crankshaft deflection at the generator end of the engine. Position a deflection gauge (Cat. 2472164) between the webs of the crankshaft nearest the generator parallel to the axis of the shaft, in the plane through the center of both the crankpin and main journals, at the outer edge of the webs, Fig. 13. Present production crankshafts

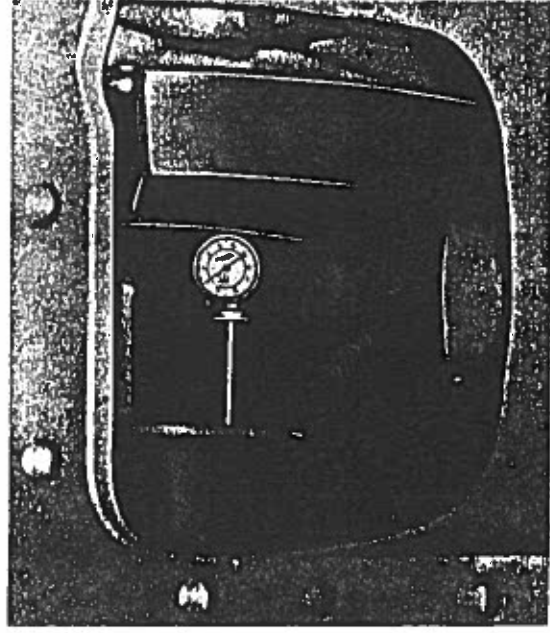


FIG. 13 - CHECKING CRANKSHAFT DEFLECTION

are provided with punch marks at the point where gauge should be positioned. Rotate the shaft clockwise and counterclockwise to limits determined by connecting rod interference. The maximum crankshaft deflection must not exceed ± 0.0008 (0.0016" total indicated runout).

CORRECTING DEFLECTION

Fixed shims are welded in place to the bottom bolting pads of the generator. Laminated shims are used at the top bolting pads.

The usually installed shim thickness is less than 0.090".

If the readings on the dial indicator exceed the maximum allowable limits, apply or remove shims at the top generator pads until the deflection is within the limits.

The crankshaft deflection should be checked before and after:

1. Mounting the main generator.
2. Installation of engine in locomotive.

ENGINE TURNING ARRANGEMENT AND TIMING POINTER

DESCRIPTION

The engine turning arrangement consists of a plate or ring attached to the back of the generator fan, a barring bar and a pointer which indicates piston Top Dead Center and Fuel Injection when the generator fan ring is properly positioned, Fig. 14.

Fan Ring

The ring is grooved around the entire circumference for the application of the barring bar. Holes drilled in the ring are marked 1-6, 3-4, 2-5 on the 12 cylinder engine and 1-8, 4-5, 2-7, 3-6 on the 16 cylinder engine.

Barring Bar

One end of the bar is designed as a clamp. A portion of the arrangement fits into the ridge in the fan ring while the rest of the clamp fits across the side face of the fan and ring. The pressure exerted on the side face tightens the clamp against the ridge and grips the fan allowing the engine to be barred over by upward or downward movement of the barring bar.

A treadle type barring tool is also available, Cat. 2290057.

OIL SEAL MAINTENANCE

1. Inspect slinger and catcher portions of the oil seal. Clean with a suitable solvent, making certain that the oil catcher and slinger grooves and the oil return channel to the crankcase are clean.
2. Remove any gasket material that may be stuck to the oil catcher.
3. Remove any gasket material from turbo-supercharger support and base. Determine whether one or two gaskets are used. A 1/8" circular sheet packing gasket is always used. This gasket serves as a shim so that the oil catcher will bear against a flat surface. Sometimes it is necessary to use a partial 1/32" sheet packing gasket between the turbosupercharger support and the 1/8" gasket.

OIL CATCHER INSTALLATION

If the same oil catcher is to be reapplied:

1. Apply new 1/8" gasket and, if necessary, a partial 1/32" gasket.
2. Apply dowels to oil catcher and position it on engine.
3. Apply lockwashers and capscrews and tighten.
4. Check radial clearance between the oil catcher and the extension shaft. This clearance should be 0.015" - 0.020".

If a new oil catcher is to be applied:

1. Apply new 1/8" gasket and a 1/32" gasket if necessary.
2. Bolt oil catcher in place.
3. Position oil catcher to obtain 0.015" - 0.020" radial clearance between the oil catcher and the extension shaft.
4. Tighten capscrews.
5. Ream dowel holes for #9 taper dowels. Be sure chips do not fall between the oil catcher and extension shaft.
6. Apply #9 taper dowels.

TRACTION GENERATORDESCRIPTION

The traction generator, driven by the diesel engine, furnishes power to the locomotive traction motors.

The generator fans are dynamically balanced and may or may not have weights welded in place. Under no circumstances should welded weights be removed. Fans are therefore applicable to and interchangeable on all generators.

REMOVAL

1. Apply lifting hoist and take up slack.
2. Insert cardboard or similar material in air space between armature and field poles to prevent damage to the armature when the generator spider flange is disengaged from crankshaft flange.
3. Remove generator coupling bolts through engine base, Fig. 12.
4. Remove capscrews, and dowels that secure the generator to the cylinder block and base.
5. Pull generator from engine.
6. Remove upper shims and tag them so that they may be reapplied in their original position.

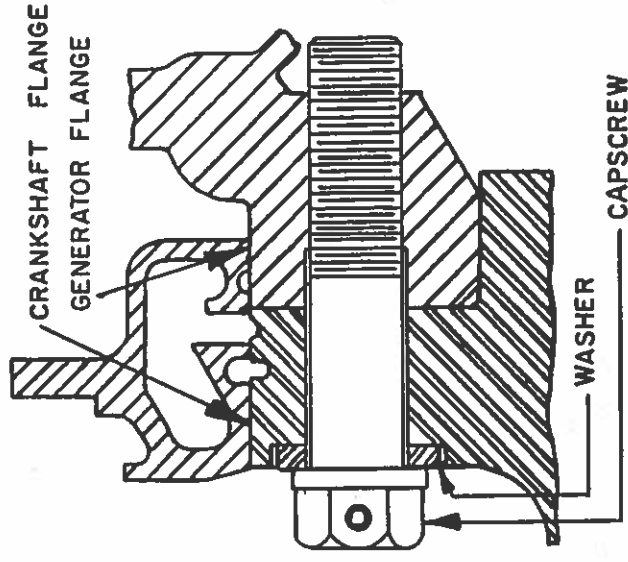


FIG. 12 - GENERATOR TO CRANKSHAFT CONNECTION