

Vehicle: All Technical Service Bulletins

Service Manual Update - Revised Cam Gear Replacement Service PR

Bulletin Number: 88-6-52
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Subject: SERVICE MANUAL UPDATE - REVISED CAM GEAR REPLACEMENT SERVICE PROCEDURE

Models 1982-88 6000, GRAND AM AND
Affected: FIERO WITH 2.5L L4 ENGINES
SERVICE MANUAL UPDATE

THIS BULLETIN SUPERSEDES CURRENT AND PAST SERVICE MANUAL PROCEDURES. THIS BULLETIN ALSO SUPERSEDES THE FOLLOWING SERVICE BULLETINS FOR THE FOLLOWING MODEL YEARS AND CARLINES.

Bulletin No. 86-6(Gasoline)-64
Bulletin No. 85-6(Gasoline)-39

Dated 10/86
Dated 6/85

The above bulletins should be discarded and replaced with this bulletin.

A set of revised service procedures has been developed for replacement of camshaft timing gears. The revised methods do not require the complete removal of the engine from the vehicle.. Cam gear replacement is generally accomplished by partially lowering the engine/cradle assembly to gain access to the cam gear.

This bulletin contains three separate and complete procedures for servicing cam gears on 6000, Grand Am, and Fiero models.

NOTICE: SEE APPROPRIATE SERVICE MANUAL SECTION FOR FASTENER TORQUE SPECIFICATIONS.

Vehicle: All Technical Service Bulletins

Fiero Model Service Procedure

Tools Required:

J28467-A	Engine Support Fixture
J28467-60	Support Foot (GT Fastback Only)
J24420-B	Cam Gear Removal Tool
J25033-B	Cam Gear Installation Tool
J34065	Parking Brake Cable Retainer Compressor
J34995	Crankshaft Front Cover Oil Seal Installer
J8001	Universal Dial Indicator W/Magnetic Base

Remove or Disconnect

1. Rear compartment lid and "battery-side" cover.

IMPORTANT: DO NOT REMOVE THE TORSION ROD RETAINING BOLTS.

2. Negative battery cable.
3. Left side cover and mounting bracket.
4. Accessory drive belt(s).
5. Upper engine torque strut.
6. Air cleaner assembly.
7. Braided body ground strap - below right hinge of rear compartment lid.
8. Trim piece on battery side.
9. Install engine support fixture - J28467-A per Service Manual.
10. Raise vehicle.
11. Both rear wheels.
12. Brakeline-to-body brackets (both sides).
13. Retaining bolt from right rear brakeline junction block.
14. Inner fender well and splash shield (right side).
15. Push pins (3) from left rear splash shield.
16. Rear suspension strut bolts - mark struts for realignment. See Section 3D in Service Manual.
17. Drain coolant partially.
18. Timing pointer plate (as applicable).
19. Drain engine oil (remove oil filter).
20. Starter - let hang.
21. Flywheel/flexplate cover.
22. Crankshaft pulley (have assistant hold flywheel).
23. Parking brake cable through cradle - J34065.
24. Front frame (cradle) bolts.
25. Rear frame (cradle) bolts.
26. Lower vehicle.
27. Lower engine assembly with engine support fixture.
28. Heater hose from intake manifold.
29. Belt tensioner (where applicable).
30. Raise vehicle.
31. Timing gear cover - do not distort.

Clean

- Timing gear cover and engine sealing surfaces.
32. Align crankshaft/camshaft timing marks on gears.
33. Drill and tap hole on the camshaft centerline (8 mm drill, 1/2 inch deep).

CAUTION: WEAR SAFETY GLASSES TO AVOID EYE DAMAGE.

USE CARE WHEN DRILLING AND TAPPING CAM GEAR TO AVOID DAMAGE TO THE CAMSHAFT.

IMPORTANT: COVER OIL PAN OPENING WITH RAGS TO PREVENT CHIPS FROM FALLING INTO PAN.

34. Tap the 8 mm hole with a 3/8-16-NC bottoming tap.

IMPORTANT: AVOID BUILD-UP OF CHIPS. BACK OUT THE TAP EVERY FEW TURNS AND REMOVE CHIPS.

35. Center punch and drill (2) 3 mm pilot holes in the metal hub of the cam gear (180 degrees apart).

IMPORTANT: USE CARE TO AVOID DRILL WANDER THAT COULD DAMAGE CAMSHAFT.

36. Enlarge pilot holes with 5.5 mm drill; 1/4 inch deep.

37. Tap 5.5 mm holes with 1/4-28-NF bottoming tap.

38. Drill a hole no larger than 1 mm (.040 in.) in the front oil gallery plug. This provides improved lubrication to the timing gears.

Clean

- Oil pan of debris.

39. Cam gear with J24420-B - do not move cam or crank.

Inspect

- Thrust plate for scuffing and/or grooving. If evident, install new thrust plate, spacer ring, and key. Thrust plate-to-block bolts torque - 10 N-m (90 in.lb.).

IMPORTANT: LUBRICATE FRONT THRUST PLATE SURFACE WITH CLEAN ENGINE OIL.

Install or Connect

1. Cam gear using J25033-B - align timing marks.

Measure

- Camshaft end play using dial indicator - J8001 or equivalent
Push cam gear onto camshaft until camshaft end play is in the range of .0015 in. to .0050 in. (.04 mm to .13 mm).

2. Front cover seal using J34995 - lubricate seal lip with clean engine oil.

3. Apply RTV sealant to timing gear cover sealing surfaces.

4. Timing gear cover to engine.

5. Lower vehicle.

6. Raise engine with engine support fixture.

7. Install cradle bolts - finger-tight.

8. Remove engine support fixture.

9. Heater hose.

10. Belt tensioner (where applicable).

Clean

- Tensioner and block sealing surfaces. Do not remove LIM ring. Apply RTV around LIM ring.

11. Raise vehicle.

12. Tighten front cradle bolts.

13. Tighten rear cradle bolts.

14. Crank pulley and bolt - have assistant hold flywheel.

15. Parking brake cable - J34065.

16. Flywheel/flexplate cover and bolts.

17. Starter and bolts.

IMPORTANT: REPLACE ANY SHIMS REMOVED.

18. Left rear splash shield.

19. Inner fender well and splash shield - right side.

20. Brakeline-to-body brackets.

21. Rear suspension strut bolts.

IMPORTANT: ALIGN TO MARKS PREVIOUSLY SCRIBED.

22. Right rear brakeline junction block.

23. Rear wheels.

24. Lower vehicle.

25. Upper engine torque strut.

IMPORTANT: SEE SECTION 6A1.

- 26. Body ground strap.
- 27. Left side cover and mounting bracket.
- 28. Timing pointer plate (as applicable).
- 29. Accessory drive belt(s).
- 30. Air cleaner assembly.
- 31. Trim piece on battery side.
- 32. Engine oil (replace filter).
- 33. Engine coolant.
- 34. Negative battery cable.
- 35. Rear compartment lid and battery side cover.
- 36. Set rear end toe and adjust if necessary.

Inspect

- For oil and coolant leaks with engine running at operating temperature.
- For proper completion of repairs.

Warranty Information

Labor Operation: J0840

For 1987-88

Labor Time	:	5.6 Hours
To Replace Crankshaft Gear - Add	:	.1 Hour
Locking Wheel Covers and/or Nuts - Add	:	.2 Hour

For 1984-86

Labor Time	:	5.8 Hours
A/C - Add	:	.1 Hour
To Replace Crankshaft Gear - Add	:	.1 Hour
Locking Wheel Covers and/or Nuts - Add	:	.2 Hour