

pen+GEAR

Invoice:

Date: 2/18/2020

HR9014

Bill To

Remit Payment To

Service Order

Terms

Due Date

Authorizer

Customer PO

Unit #

1021

2/18/2020

602

Item Description

Quantity Rate Amount

Complaint: Camshaft Replacement, Due To Worn Camshaft Roller Follower.

Cause: Customer request

Labor Correction:

Engine / Camshaft / Pulled truck in shop, drained coolant system, removed all intake and exhaust components for head removal, removed coolant package, removed fan, fan hub and all front brackets to gain access to front gear housing cover for camshaft removal. removed all top end, jakes, rockers, injectors, push tubes, rocker housing, etc. removed all fuel lines and electrical that was connected to cylinder head. removed all cylinder head bolts, removed cylinder head from engine block. inspected camshaft followers and found multiple are worn and camshaft nose is gone on 2 cylinders. removed camshaft follower shafts, removed front gear housing, removed camshaft from engine. Removed old gear from camshaft, installed gear on new camshaft. installed camshaft, cleaned cam follower shafts and installed all new camshaft followers, installed new head gasket, cleaned head from packaging, installed new head, installed new head bolts and torqued per engine torque specs. cleaned up rocker lever shafts, installed all new rocker levers, installed new rocker lever bolts and studs, torqued to spec. replaced #4 injector due to spring being broken. set entire overhead adjustment, installed compression brake housings and set up compression brake, left vva's backed off as they were from when truck came in, installed valve cover, assembled turbo side of engine and front gear housing, installed coolant package, charged ac, filled coolant system, made up bracket to hold oil feed lines to turbo. made gaskets for new plates on side of engine. reprogrammed #4 injector. cleared faults but still has fault for after treatment system that was there when truck came in. no effect on engine running condition. installed plug on intake system. ran engine and checked for leaks. no leaks noticed. Took truck for test drive. test drive went well. good boost and good response. after test drive, checked for leaks, no leaks. engine runs smooth and no blue smoke on start up like before. - 2/18/2020

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|-------|-------------------------------------|----------|--|
| Parts | Cylinder Head C13 | 1.00000 | |
| Parts | Dirty Core for Cylinder Head C13 | -1.00000 | |
| Parts | Inherent Core for Cylinder Head C13 | 1.00000 | |
| Parts | Stud Exhaust Manifold | 12.00000 | |
| Parts | Oil Filter C13 | 2.00000 | |
| Parts | Exhaust Manifold Gasket | 4.00000 | |
| Parts | Lifter As. Injector C13 | 2.00000 | |
| Parts | Lifter As. Valve C13 | 2.00000 | |
| Parts | Arm as Rocker | 6.00000 | |
| Parts | Dirty Core for Arm as Rocker | -6.00000 | |
| Parts | Inherent Core for Arm as Rocker | 6.00000 | |
| Parts | Arm As Rocker | 6.00000 | |

