AMT Truck, Fleet and Trailer Repair

25791 114 Avenue Unit 136 Parkland County, AB T7X 6E2, CA repair@amttruck.ca 587-853-0388



Invoice: 11014

184.50000

\$100.00 \$18.450.00

Date: 7/6/2023

Bill To Tuber Towing

5328 Calgary Trail Northwest

Unit 1140

Edmonton, AB T6H 4J8, CA

P: (587) 598-8237

Service Order	Terms	Due Date	Authorizer	Customer PO	Unit #
1302	Net 120	11/3/2023	Tuber Towing		21

Item Description Quantity Rate Amount

Complaint: In-frame engine, cylinder 3 leaking coolant.

Cause: Customer request

Labor Correction:

Engine / Overhaul / (Engine and coolant already drained, oil pan removed) put empty oil drum in front of hood. Opened hood resting on a cloth on the drum. Unbolted hood cables. Removed the pins retaining the hood stability bars. Disconnected the electrical connections to the hood, on the left side, a repair was a done and the wire to the hood had a butt connector on it, cut wires. Loosened off the hood mounts and removed the hood mounting bolts, removed hood and set down in front of truck.

Noticed the a/c rad lines were broken off. Traced lines back to the compressor and cab and unbolted from location. Removed the 2 retaining straps and removed the lines. I was unable to gain access to the Transmission cooler lines with the A/C rad and bumper in place. Removed the 2 upper bolts from the A/C rad, the 2 lower bolts were in a tight spot used a wrench and got small turns took awhile to remove the bolts. Removed A/C rad. Unbolted and removed the left and right tow hooks.

Removed the bumper mounting bolts. The bumper was rusted into place used a pry bar and gently pried bumper from the frame. Used 2 jumbo wrenches to Crack the transmission lines (they were very rusted and incredibly tight) plugged lines with rags. Loosened off the rad hose clamps at the radiator. Unbolted the lower rad supports. Removed the fan shroud bolts to give the shroud room. Disconnected the coolant reservoir hoses. Removed the cab heater hoses. Removed the mounting bolts, Removed the upper rad mounts and lifted out the rad assembly. Loosened off the clamps for the tube cooler pipe. Removed pipe and covered turbo with rag. Removed the air box lid and filter. Loosened the air intake pipe clamps. Unbolted the air box. Removed box and piping. Removed the air box mount to gain more access to the engine. Followed the wiring harness across the top of the engine, disconnected the connectors and removed any retainers for the harness, moved harness off the engine and laid it down the left frame rail.

Removed the fan and fan pulley bolts. Fan is a different set up special tool is needed. Went into the cab to remove the dog house. Unbolted the side floor step plates, lifted the front floor mat's. Unbolted the center dash to gain more room. Removed the mounting bolts to the dog house, removed park brake handle cover. CMD 27/04/22

Unbolted the park brake handle, moved the park break handle as far as the cable would allow. Tried removing the dog house it was unable to pass by the drivers seat.

Item Description Quantity Rate Amount

Unbolted the seat mounts. Adjusted the seat so it had room to shift back, shifted seat towards rear of cab and raised the floor covering as much as possible, it was tight but was able to remove dog house. Attempted a different method of removing the fan from the engine, It worked. Removed fan and fan pulleys. Fan bearing dose not sound very good (recommend replacement). Unbolted the turbo oil inlet and drain lines. Unbolted turbo, turbo mounting bolts were incredibly tight.

Removed turbo. Unbolted the valve cover. Used a socket and removed the electrical connector from the valve cover. Removed valve cover, valve cover is full of coolant oil mix. Carefully unclipped, marked and removed the injector wiring harness. Unbolted rocker arm shaft and removed, removed the push rods, set them in order on the bench with there corresponding rockers. Unbolted the head. Used a chain and engine picker to remove the head from the block.

Set head down on flat dolly, removed sensors, fittings, intake and exhaust manifolds. Removed the lifters, set on bench in order with corresponding push rods and lifters. Bared engine over to gain access to the connecting rod cap bolts, Removed the pistons and set in order with there caps and bearings. Cleaned off head gasket remnants from top of block. CMD 28/04/22

Unbolted and removed engine oil cooler. Disassembled the oil cooler. Used the pressure washer and washed out the valve cover oil pan and head.

Used shop air and rags to dry off parts. Used shop air rags and cleaning product to clean and inspect rocker arms push rods lifters lifter retainers oil cooler cam and crank. All look good. CMD 29/04/22

Cleaned off gasket remnants from top and bottom of block. Installed new seals onto the oil cooler assembly. Installed oil cooler onto side of engine.

Unbolted the crankshaft main bearing caps individually dropping them. Used a screw and turned the engine to remove and install the upper main bearings.

Once all the upper and lower main bearings were changed. Torqued main caps to 160 ft lbs. Cleaned the cylinder walls. Installed the new liners. Checked and ensured all the liners were within spec for the protrusion. All the liners were within spec.

Torqued the rod caps to 115ftlbs taped and cleaned engine block.. painted engine block . Mounted the intake manifold with a new gasket. Torqued manifold bolts to 45 ftlbs. Installed the exhaust manifold with a new gasket.

Torqued manifold bolts to 60 ftlbs. Soaked the lifters in new engine oil to fill them. Installed the lifters in the same location that they were removed. Installed the head gasket to the deck of the block. Used the engine lift to lift the head and get it into place. Once the head was set, installed and torqued head bolts in 3 stages to a final torque of 165 ftlbs. Installed push rods. Set rocker assembly and alighted the push rods with the rockers.

Torqued the rockers to 165ftlbs. Went to adjust the valve lash. Noticed one of cylinder number six was not properly on the rocker. Removed the rocker arm assembly. Checked all push rods. Only the one push rod from #6 was slightly bent. Need to replace pushrod. Installed new push rod. Installed rocker arms. Installed valve cover and gasket.

27/06/2022//Head Gasket was leaking after the coolant went in. head gasket needs to be removed and replaced. drained the coolant and disconnected the coolant lines going to the head. Removed the fuel lines from the head. Disconnected the exhaust pipe and intake pipes. Removed valve cover. Removed injectors injector harness rocker arms and push rods. Unbolted and lifted the head strait up. Removed and inspected the old head gasket. Was unable to find and signs of damage or fault in the gasket.

Cleaned off the deck and head. Used a strait edge to check how level and square the deck and head, they both look completely flat, Zero light was shinning through the strait edge. Cleaned the deck and head. Installed the new head gasket. Set head down torqued to spec. Installed pushrods rocker arms and injectors. Installed valve cover and gasket. Connected all electrical and coolant lines. Installed intake. Filled coolant. Attempted to start unit. Unit was unable to start. There was no oil pressure.

Drained engine oil and coolant. Disconnected the coolant and trans cooler lines from the rad. Removed the rad hold downs. Removed the rad from the unit. Removed the fan and all front pulleys. Unbolted and removed the engine oil pan. Inspected the oil pick up tube and gasket for any signs of damage. Nothing was found. Unbolted the oil pump. Inspected the pump. There are signs of wear. CMD

Unbolted the front timing cover and noticed it was cracked right at the oil pickup tube.

Item	Description	Quantity	Rate	Amount
	Set engine to TDC and removed the idle gears and cam gear. Unbolted and removed cover. Cleaned engine block and all parts. Installed new gasket onto inner timing cover. Removed the engine oil filter and cooler from the engine. Removed the Oil pressure regulator. Cleaned oil cooler and installed new gaskets. Installed engine oil cooler. Installed the back section of the gear cover onto the engine. Insured the engine was at TDC. Timed and installed the gear train into the cover. Torqued the gear bolts to spec. Cleaned water pump. Installed new seals onto the front half of the gear cover, applied silicone to the split sections of the gasket. Installed outer cover. Installed engine mounts. Installed all the pulleys on the front cover. Installed engine mounts. Installed oil pick up and oil pan with new gaskets. Installed the rad. Connected all the coolant lines. Filled engine and coolant. Primed and ran truck. Truck ran okay but there is a upper end tick. Removed valve cover and checked valve lash. Valve lash is in spec. Noticed the connector to #6 injector was broken and unable to make a stable connection. Removed injector #6 and #2 inspected both and Installed them in opposite locations from which they were removed. Fixed the connection and reassembled the engine. Ran the engine but the tick was still audible. Disassembled the valve cover. Removed the rocker arm assembly. removed the lifters. Inspected the rockers lifters push tubes and camshaft. No noticeable damage or source of the tick. Removed the fuel and coolant lines going to the head. Removed the rad assembly. Unbolted and removed the head off of the engine. Noticed something had got into cylinder #1. It had destroyed the top of the piston and put a couple of marks into the head. Removed the oil pan. Removed piston and sleeve #1. Send head out to get inspected and re surfaced. Cleaned the deck oil pan and remainder of removed parts. Head had come back. Installed new sleeve and piston. Re assembled the engine. Filled with fluids. Primed and cranked ove			
Parts	Completed: 2/2/2023 Drive belt	1.00000	\$85.283	\$85.28
Parts	Gasket kit-oil cooler	1.00000	\$166.914	\$166.91
Parts	Spray paint-international blue	2.00000	\$10.483	\$20.97
Parts	3.50" - 3.81" T-bolt clamp	2.00000	\$18.579	\$37.16
Parts	Push rod	1.00000	\$80.586	\$80.59
Labor	Bearing-fan	1.00000	\$159.60	\$159.60
Labor	Seal - front crankshaft	1.00000	\$95.20	\$95.20
Parts	Upper radiator hose	1.00000	\$45.804	\$45.80
Parts	Sleeve 3/8" tube-fuel line	2.00000	\$9.13	\$18.26
Parts	Cylinder head gasket	1.00000	\$316.459	\$316.46
Parts	8X20MM 10.9 CRS FLNG bolt	2.00000	\$1.03	\$2.06
Parts	Screw FL HD M5X12	3.00000	\$3.88	\$11.64
Parts	Bolt M16 X 65MM	1.00000	\$22.946	\$22.95
Parts	Bolt M20 X 70 12PT	1.00000	\$27.863	\$27.86
Parts	Gasket-kit front cover	1.00000	\$578.60	\$578.60
Parts	Gasket-oil pan	1.00000	\$122.694	\$122.69
Parts	Gasket-oil suction	1.00000	\$14.74	\$14.74
Parts	Seal - front crankshaft	1.00000	\$103.62	\$103.62
Parts	Gasket-oil filter housing	1.00000	\$22.539	\$22.54
Parts	Freight to bring in parts	1.00000	\$16.50	\$16.50
Parts	Seal air compressor	1.00000	\$7.106	\$7.11
Parts	Seal rexroth pump	1.00000	\$24.354	\$24.35
Parts	Gasket water inlet	1.00000	\$6.248	\$6.25
Parts	O-ring filter housing	1.00000	\$8.118	\$8.12

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Item	Description	Quantity	Rate	Amount
Parts	Seal air compressor	1.00000	\$7.106	\$7.11
Parts	Connector	1.00000	\$25.828	\$25.83
Parts	Antifreeze 50/50 mix	10.50000	\$3.35	\$35.18
Parts	5W40 engine oil	35.00000	\$9.56	\$334.60
Labor	Oil filter	1.00000	\$42.10	\$42.10
Labor	Filter environmental fee	1.00000	\$1.10	\$1.10
Parts	5W40 engine oil	32.00000	\$9.58	\$306.56
Parts	50/50 Pre mix automotive antifreeze	4.00000	\$2.96	\$11.84
Parts	14" Black tie strap	10.00000	\$0.35	\$3.50
Parts	11" Black tie strap	5.00000	\$0.17	\$0.85
Complain	t: Rebuild cylinder head			
Cause: C	ustomer request			
(Inspection	n)			
Labor	Cylinder head rebuilt DT466	1.00000	\$1,769.298	\$1,769.30
Complain	t: Reassemble cab after in-frame.			
Cause: C	ustomer request			
(Inspection	n)			
Labor	Correction: Chassis / Cab / installed dog house installed seat installed trim installed vinyl flooring, installed park brake mount and installed shifter and cover - Completed: 1/27/2023	3.50000	\$100.00	\$350.00
Unit: 21 \	/IN : 1HTMMAAM22H529146	Sh	op Supplies	\$125.00
2002 International MA025 Chassis: 257,718 Kilometers				\$23,458.23

Payment Information

Date Created	Date Applied	Payment #	Method	Reference #	Amount
7/1/2023	7/21/2023	4628534	Check		\$24,631.14

\$1,172.91

\$0.00

Total \$24,631.14

(5% of \$23,458.23)

Payments & Credits \$24,631.14 **Balance Due**

Any warranties on the parts and accessories sold hereby are made by the manufacturer. You understand and agree that we make no warranties of any kind unless expressed in writing. You hereby authorize us to perform the repair work herein set forth and to purchase the necessary material and parts to perform such repair work. You agree that we are not responsible for loss or damage to your vehicle or articles left in your vehicle in case of fire, theft, or any other cause beyond our control or for any delays caused by unavailability of parts or delays in part shipments by the supplier or transporter. In addition, you agree that we are not responsible for damages to your vehicle from freezing due to lack of antifreeze. You hereby grant our employees permission to operate your vehicle on streets, highways, or elsewhere for

9	ne purpose of testing and/or inspection. You acknowledge and agree that an express mechanic's lien on your vehicle is ranted to secure payment of this invoice for the repair work detailed in this invoice. E-Transfers can be sent to r@amttruck.ca - GST#774972400RT0001
С	ustomer Signature:
Р	rinted Name:Date: