



First Fleet Maintenance
GST Number 833031859RT0001
140 MacLennan Crescent
Fort McMurray, AB T9H 4E8
(780) 743-0565
info@firstfleet.ca
firstfleet.ca



Invoice #25731

Created: 2/13/2024 03:02 PM MST
Invoiced: 3/19/2024 01:56 PM MDT
Payment Term: Net 30
Payment Due: 04/18/2024
Service Writer: Monica Tremblay

Northern Diesel LTD
PO Box 5898
Fort McMurray, AB T9H5B4
office@northerndiesel.ca

2015 International 7000 [7400] (White, #NDL 049)
VIN: 1HTWGAZT5FH660234
License Plate: 04P674
Last Recorded: 340,830
Kilometers: 342,581
Kilometers In: 342,581
Kilometers Out: 342,581

COPY

Customer Comments

ENGIEN HOURS 15271

CHECK AND REPORT FOR CODES

Retrieve fault codes & document. Remove engine components to access & remove fuel injectors to inspect. Ben inspected injectors & requested to replace #2 injector & all O-rings on other injectors and high pressure rail. Drain engine oil to inspect & found large amounts of coolant in oil pan. Remove engine oil pan for further inspection. Remove engine components to access engine head. Remove head & inspect. Found cracked loner on cylinder 5 and a few damaged valves. Ben is dealing with dealer about warranty. Engine is being replaced.

	Description	HRS	Subtotal
1	NDL Note: LABOUR	30	\$2,700.00
2	NDL Note: LABOUR	-30	-\$2,700.00
			Total: \$0.00

REMOVE AND REPLACE ENGINE

Removed and replaced engine

Started by removing the following

- rad, air to air, ac condenser(ac recovered @ 1.63lbs), coolant tank and all lines going to tank or surrounding area and grille
- removed hood, hood safety cables and mounts
- removed alternator, and ac compressor
- removed lower coolant lines for tranny cooler, left tranny cooler in truck
- removed bell housing bolts and put a tranny jack under the tranny to take stress off the support bracket and drive shaft
- removed flex plate bolts
- removed power steering lines and drained fluid in reservoir
- removed starter and all cables. Removed battery cables to avoid arcing
- removed oil drain lines from turbo and crankcase
- removed front and rear motor mounts and removed engine

After engine is removed I inspected the following

- inspected the whole wiring harness, engine and chassis
- tapped up all chassis harness to add protection around loose wires
- inspected all connectors on both harness
- tapped up engine harness
- cleaned and retaped starter cables, inspected for corrosion
- during inspection of harness found the rpm sensor connector has pulled out wires. Will need new crimps
- tested block heater cord, loomed and tapped to add protection on wire.
- cleaned engine bay of all oil and grease, sprayed down with degreaser and pressure washed



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REMOVE AND REPLACE ENGINE

While engine is out and on the ground I have done the following

- transfer all pulleys, idlers and fan hub
- transfer all coolant piping that is missing, had to remove egr cooler on new engine to make room to slide piping in
- transfer crank case filter and hook up turbo drains
- transfer egr blocking plate
- transfer motor mounts
- transfer engine harness and ecm onto new engine. Hooked all connectors up and ground cables to block. Cleaned ground cable mounting bolts.
- *ECM AND ECM CONNECTORS ARE BUSTED. BROKEN PRIOR TO ME WORKING ON IT*
- Hooked up ecm connectors as best as possible due to broken connector and ecm plug in.
- transfer air compressor and power steering pump. Cleaned compressor and power steering pump prior to installing.
- transferred over all coolant fittings, lines and oil return fittings and lines.
- transfer alternator bracket
- removed valve cover and removed new HPOR (high pressure oil rail), unplugged all injectors and removed valve cover gasket.
- installed old HPOR, replaced all Jake brake o rings and cleaned up old HPOR. Put HPOR on engine and fully seated o rings to prevent damage during torquing. HPOR torqued at 22ftlbs. Reconnected all injector connectors and Jake brake connectors.
- Installed valve cover gasket and plugged into engine harness.
- put on valve cover and torqued to 25ftlbs
- put on 45 degree pipe on back side of turbo. Had to remove studs from old turbo and installed into new turbo.
- finished tying up and checking over engine before putting back into truck.

Put engine back into truck

- lined up and installed motor mounts
- mounted and bolted transmission
- mounted and torqued flex plate, bolts installed with blue lock tight
- hooked up compressor discharge, fuel lines and plugged in all engine harness. All connectors installed with sole di electric grease to prevent corrosion in the future
- had to replaced pins in RPM sensor on flywheel
- new fuel line plastic clips on smaller low pressure suction line
- installed down pipe, hooked up fuel doser unit on LHS side of engine and hooked up line to down pipe of turbo.
- reinstalled front cross member and transmission cooler, hooked coolant lines up to cooler.
- installed air to air cooler and hooked coolant lines up.
- reinstalled alternator and ac compressor hooked all cables up, plugged in ac compressor and ran lines to front of rad.
- installed both belts
- connector remaining connectors to ecm
- reinstalled starter and all starter cables
- reinstalled fill tube and mounted to transmission fill tube
- reinstalled rad, and tightened lower mounts and upper support arms
- hooked up all coolant lines to rad and engine
- mounted and hooked lines up for power steering
- mounted washer fluid fill tube
- reinstalled fan
- reinstalled all piping to turbo, air to air, intake, air filter housing, compressor intake, restriction gauge line and tightened all clamps.
- reinstalled coolant tank and hooked up lines.
- filled coolant, engine oil, and power steering
- unplugged cam sensor and primed fuel system.
- hooked computer up to watch gauges and diagnostic systems.
- fired truck up. Ran truck for ten minutes while checking for leaks and all is looking good. Shut truck down and started tying up transmission cooler lines and power steering lines under front motor mount.
- recharged ac 2.25lbs put into ac.
- reinstalled grille and hood.
- put drive shafts back on truck
- reinstalled both fenders, broken bolt in LHS removed.



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REMOVE AND REPLACE ENGINE

Loosely reassembly old engine for core

	Description	Price	QTY	HRS	Subtotal
1	NDL-1 Note: LABOUR			50	\$4,500.00
2	15W40 OIL BULK Part #: 31311-1000L	\$5.02	25		\$125.50
3	COOLANT Part #: 16-834	\$2.49	52		\$129.48
4	POWER STEERING FLUID Part #: PSF1L	\$14.19	3		\$42.57
5	AIR FILTER Part #: AF25707	\$71.86	1		\$71.86
6	FITTING Part #: 3591094C1	\$27.99	1		\$27.99
7	CONNECTOR Part #: 3612840C1	\$27.63	1		\$27.63
8	PIGTAIL Part #: TXT126870205	\$3.73	2		\$7.46
9	FREON Part #: GDR134A	\$17.03	1		\$17.03
10	WASHER FLUID Part #: 15-204	\$4.21	1		\$4.21
Shop Supplies (10%): \$400.00 GST (5%): \$267.69					Total: \$5,621.42

CHECK ADN REPAIR HYDRALIC HOSES ON DECK ARE LEAKING

Inspected hydraulic leave at rear of truck by valve bank. Hydraulic line is a main hose, either suction or return runs from front of truck to rear. Checked to see if hose was loose and was able to get it tightened up about half a turn. Hard to tell if it was leaking out of the crimp or the fitting due to oil being all over the fitting and crimp. Cleaned everything up run truck for a couple days and see if leak continues. If leaks out of the crimp will need to replaced line.

	Description	HRS	Subtotal
1	NDL Note: LABOUR	0.5	\$45.00
GST (5%): \$2.25			Total: \$47.25

CHECK TOOL BOX PASSENGER SIDE AND REPAIR

Inspected handles to see why strap was around tool box. Rear handle locking mechanism is seized. Pulled handle off and freed up with some penetrating oil was able to get the locking mechanism to free up. Installed back onto door and tested. Both handles are working and door is staying shut. Tried to lightly pry open to see if it'll unlatch down the road and unable to open door until you release handles.

Description	HRS	Subtotal
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CHECK TOOL BOX PASSENGER SIDE AND REPAIR

1	NDL Note: LABOUR	1	\$90.00
GST (5%): \$4.50			Total: \$94.50

REPAIR WIPER ARM - BROKEN WHEN REMOVING ENGINE

Removed broken wiper support and replaced. Had to remove wiper cowl to make room for support to be installed and removed. After replacing filled wiper tank and tested. Had to adjust wiper arms as they were going past the window while coming down
WARRANTY

	Description	Price	QTY	HRS	Subtotal
1	NDL Note: LABOUR			1.5	\$135.00
2	000- WARRANTY Note: LABOUR - WARRANTY			-1.5	-\$135.00
3	WIPER REGULATOR Part #: 2588669C7	\$250.41	1		\$250.41
4	WIPER REGULATOR Part #: 2588669C7	\$250.41	-1		-\$250.41
					Total: \$0.00

Thank you for your business. The work is complete and your payment is due upon pickup of the vehicle. Mechanics liens may be placed on vehicles until repairs are paid for in full. Please contact us promptly if you have any questions about anything we did.

Signature _____

Parts	\$453.73
Labor	\$4,635.00
Subtotal	\$5,088.73
Shop Supplies	\$400.00
GST	\$274.44
PST	\$0.00
HST	\$0.00
Grand Total	\$5,763.17
Paid To Date	(\$0.00)

REMAINING BALANCE \$5,763.17

Authorizations

In Person by Northern Diesel LTD 3/18/2024 at 2:26 PM MDT	+ REMOVE AND REPLACE ENGINE	\$5,763.17
In Person by Northern Diesel LTD 3/18/2024 at 2:25 PM MDT	+ CHECK AND REPORT FOR CODES + REMOVE AND REPLACE ENGINE + CHECK ADN REPAIR HYDRALIC HOSES ON DECK ARE LEAKING + CHECK TOOL BOX PASSENGER SIDE AND REPAIR	\$5,758.75



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Authorizations

+ REPAIR WIPER ARM - BROKEN
WHEN REMOVING ENGINE