

Tax Status	Terms	P.O.#	Service Date	Invoice Date
RES	CHARGE	N/A	7/24/2023	8/11/2023



Serial Number	Unit Number	Make / Model	Year	License Number	Mileage
1XKZD49X5LJ313874	1	Kernworth/T880	2020		440622

OPERATION 2

COMPLAINT: C/A METAL IN OIL PAN

VMRS CODE: 01-045-006-003-03-44

CORRECTION: REPLACE WITH NEW-BEARING - CONNECTING ROD, ENGINE-

CONNECTING ROD, PISTON & RINGS ASSEMBLY-WORN
 CHECK AND FOUND METAL IN PAN GOT ALL INFO AND TOOK PICS.
 METAL IN PICS LOOKS LIKE COULD BE TEETH FROM A GEAR. PULLED
 UNIT IN SHOP, HOOKED TO ENGINE, PRINTED CODES, FEATURES AND
 PARAMETERS, SAVED ECM IMAGE. DRAINED OIL, REMOVED OIL PAN,
 PICKUP TUBE, AND OIL PUMP. NO DAMAGE FOUND ON THE FEW GEARS
 THAT I CAN SEE FROM THE BOTTOM. REMOVED CAC PIPE AND AIR
 INTAKE PIPE FROM TURBO, REMOVED AIR FILTER HOUSING, EGR
 CROSSOVER PIPE, VALVE COVER-NO DAMAGE FOUND. REMOVED
 STIFFENER PLATE AND #4 MAIN BEARING AND THRUST BEARINGS-NO
 DAMAGE TO BEARINGS. REMOVED BELTS, A/C COMPRESSOR,
 ALTERNATOR, ACCESSORY BRACKET-BOTTOM 2 BOLTS BROKE IN
 ACCESSORY BRACKET. REMOVED FAN, FAN HUB, CCV AND BRACKET IT
 BOLTS TO, FRONT COVER, CHECKED GEARS-NO DAMAGE FOUND. SINCE
 UNIT HAS CODES FOR IDLE SPEED I WENT AHEAD AND CHECKED
 TIMING BETWEEN CRANKSHAFT AND CAMSHAFT-THEY ARE IN TIME
 REMOVED TIMING PIN FROM CRANKSHAFT AND WEDGE FROM CAMSHAFT,
 INSTALLED FUEL LINES THAT I REMOVED TO INSERT TIMING PIN IN
 BLOCK. OPENED EDS SESSION AND UPLOADED PICS OF METAL. CALLED
 CUMMINS. THEY ADVISED TO START GOING THROUGH INSPECTIONS
 PORTION OF THE SERVICE MANUAL SECTION 007-083. PRINTED OFF
 SECTION 007-083. WENT AHEAD AND GOT PARTS EST. TO REPLACE
 ROD AND MAIN BEARINGS. STORY ALREADY TYPED REMOVED FUEL
 LINES AND BRACKETS TO REMOVE FUEL PUMP HEAD AND INSPECT OK.
 REMOVED #1,2,3 MAIN BEARINGS AND INSPECT ALL OK NORMAL WEAR.
 RE-INSPECT GEAR TRAIN AND HOUSING OK. GOT ALL PARTS FOR
 DOING THE LOWER END. . . INSTALL #1,2,3, AND 4 MAIN BEARING
 AND THRUST WASHERS. FINISHED MAINS AND TORQUED. REPLACED
 #1,6,2 ROD BEARINGS. FINISHED ALL ROD BEARINGS. STEAM CLEAN
 OIL PAN AND PICK UP TUBE ALSO STIFFNER PLATE. INSTALLED OIL

CUST

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PUMP AND STIFFNER PLATE AND PICK UP TUBE. DRAIN COOLANT AND REMOVED TURBO AND PIPING, EGR COOLER AND OIL COOLER ALSO REMOVED OIL THERMOSTAT. STEAM CLEAN EGR COOLER AND INSTALLED. FINISH INSTALLATION OF EGR COOLER AND REPLACED ALL ORING AND GASKETS. INSTALLED TURBO. FINISH INSTALLING EXHAUST AND CLEAN FRONT COVER PLATE AND REPLACED GASKET AND INSTALLED. REPLACED BYPASS VALVE. INSTALLED VALVE COVER, OIL PAN AND PUT COOLANT BACK IN TRUCK, ALSO PAINTED NEW ACCESSORY BRACKET. INSTALLED FAN HUB, FAN, FAN BRACKET, ACCESSORY DRIVE BRACKET. HAD TO SWAP ALL TENSIONERS AND IDLER FROM OLD BRACKET TO NEW ONE. INSTALL A/C COMPRESSOR, ALTERNATOR, BOTH BELTS. INSTALL AIR COMPRESSOR PIPE WITH UPDATED ORINGS. CAC PIPE. CONNECT ALTERNATOR HOT AND GROUND. INSTALLED AIR COMPRESSOR BRACKET AND PIPE WITH NEW ORINGS, BRACKET FOR CRANKCASE FILTER AND HIGH PRESSURE PUMP HEADS AND TORQUED. ASSEMBLE AIR FILTER HOUSING AND SECURE ALL THINGS WITH ZIP TIES. PUT OIL IN TRUCK AND START ENGINE.

4965487CUM	CORE, COOLE.	1
LF14000NNFLG	FILTER .102593226 P5	1
82194	SILICONE -ULTRA GREY	1
2882087CUM	SET-ROD BEARING	6
75130	TOWELS SCOTT	1
5406110CUM	SET, MAIN BEARING (STD)	1
105FBC	LUBRIPLATE	1
RF1135298	CLEANER BRAKE NON-CHLO	6
4393172CUM	SEAL, O RING	1
3678574CUM	SCREW, CONNECTING ROD C	24
6589IMP	CLEANER SOLVENT SW78	1
911462-8IMP	ALCOHOL	1
RX5680039RXCUM	PUMP, LUBRICATING OIL	1
CX5680039RXCUM	PUMP, LUBRICATING OIL	1
CR5680039RXCUM	PUMP, LUBRICATING OIL	1
4026684CUM	GASKET, OILPAN	1
40154IMP	NUT 3/8-16	1
40154IMP	NUT 3/8-16	1
3694955CUM	SUPPORT, ACCESSORY	1
FREIGHT	CHARGE FREIGHT	1
550045126	OIL GALLONCJ4 ROTELLA	1
4376196CUM	KIT-OIL COOLER REPAIR	1
4298975CUM	NUT, LOCK	1
3690535CUM	THERMOSTAT.	1
3689587CUM	STUD, HIGH TEMPERATURE	1
4973532CUM	GASKET-OIL COOLER CORE	1
3695041CUM	GASKET-TURBOCHARGER	1
5264570CUM	GASKET-DRAIN OIL	1
4966441CUM	GASKET, EXH.	1
3104230CUM	GASKET, EXH GAS RCN VAL	1
3683607CUM	SEAL, MOLDE.	1
3683814CUM	SEAL, O RING	1
3687007CUM	SEAL, RECTA.	1
4357177CUM	VALVE-PRESSURE RELIEF	1

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OPERATION 2

15197IMP	BOLT	1
3090126	SEAL,O RIN.	2
FREIGHT	CHARGE FREIGHT	1
3914407CUM	SCREW,HEX FLANGE HEAD	2
5658098CUM	SEAL,O RING	4
500010011	ROTELLA T4 TRIPROT 10W	11
CT05512	WRAP -TIE 14 1/2"	12
FREIGHT	CHARGE FREIGHT	1
RF1135298	CLEANER BRAKE NON-CHLO	1
RF5100	ANTIFREEZEHD ELC 50/50	1
	Parts	
	Total Operat	

OPERATION 3

COMPLAINT: DELIVER TRUCK TO TEXARKANA
 VMRS CODE: 01-999-999-999-06-00
 CORRECTION: INSPECT-TOTAL VEHICLE-TOTAL VEHICLE-NO FAILURE

OPERATION 4

COMPLAINT: PERFORM ALIGNMENT
 VMRS CODE: 01-016-002-011-03-44
 CORRECTION: REPLACE WITH NEW-BUSHING - EYE, FRONT SPRING-FRONT SPRINGS-WORN
 INSPECTED FOR ALIGNMENT AND FOUND NEEDS SHACKLE PINS AND BUSHINGS ON STEER AXLE. PERFORMED COMPLETE ALIGNMENT

ALIGNMENT MACHINE ALIGN MACHIN

Total

OPERATION 5

COMPLAINT: C/A CEL
 VMRS CODE: 01-044-002-020-03-51
 CORRECTION: REPLACE WITH NEW-SENSOR - WATER, FUEL/WATER SEPARATOR-FILTERS-INOPERATIVE
 START T/S 3716ENGINE SPEED AT IDLE . REMOVED SENSOR AND CHECK FOR IT TO BE DAMAGED ON CAM, OK. REMOVED CRANK SENSOR, OK . PERFORM CHANGE OF STATE TEST PASS . T/S CODES FOR CEL INSTALLED EXTENSION HARNESS HAD TO REMOVE FRESH AIR FROM AIR COMPRESSOR AND THE BOX ALSO REPLACED CRANK SENSOR. REMOVED STEP AND REPLACED PM SENSOR AND OUTLET NOX SENSOR AND SECURED . PUT STEP BACK ON . CLEARED CODES AND HAD CODE 272 FOR FUEL PUMP ACTUATOR . CHECK RESISTANCE AT ACTUATOR 2.7 OHMS IN SPEC . CHECK RESISTANCE FROM ENGINE GROUND TO SIGNAL PIN IN SPEC . DISCONNECT J-1 HARNESS AT ECM AND MEASURE RESISTANCE FROM PIN 10 TO PIN 1 0.2 OHMS IN SPEC. MEASURE RESISTANCE FROM PIN 11 TO PIN 2 0.2 OHMS IN SPEC . NOTE THERE WAS ENGINE OIL IN HARNESS LEAKING AT CONNECTOR IN HEAD. CHECK FOR FUEL PUMP ACTUATOR CIRCUIT PIN TO GROUND

OPERATION 5

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SHORT MEASURE RESISTANCE IN SPEC. FUEL PUMP ACTUATOR PIN TO
PIN SHORT. MEASURE RESISTANCE FROM SIGNAL PIN TO ALL OTHER
PINS IN SPEC. MEASURE RESISTANCE FROM RETURN PIN TO ALL
OTHER PINS IN SPEC. PULLED NEW FUEL ACTUATOR FROM PARTS.
UNBOLTED AND REMOVED OLD ACTUATOR. HAD TO CHASE THREADS ON
BOLTS. INSTALLED NEW ACTUATOR AND PLUGGED IN. CRANKED ENGINE
AND CODE FOR ACTUATOR, 0272 IS INACTIVE. LOOKED OVER OTHER
CODES AND HAS 1845 ACTIVE FOR WATER IN FUEL SENSOR.
DISCONNECTED AND CODE DID NOT CHANGE. INSTALLED JUMPER AND
CODE CHANGED, INDICATING HARNESS IS GOOD. PULLED NEW SENSOR
FROM PARTS. DRAINED FUEL BOWL. REMOVED AND REPLACED SENSOR.
PLUGGED AND CYCLED KEY, TILL FUEL BOWL FILLED UP. CYCLED
KEY FOR LIFT PUMP AND CRANKED ENGINE, IT RAN ROUGH SEVERAL
MINUTES AND SMOOTHED OUT. CODE 1845 IS INACTIVE FOR WATER IN
FUEL. HAVE ACTIVE CODES 553, 4616 AND 5177. STARTED
TROUBLESHOOTING CODE 553, FOR INJECTOR METERING RAIL
PRESSURE. CHECKED FOR PRIMARY CODES, NONE. CHECKED FOR
PRIMARY FUEL FILTER RESTRICTION. FILTER IS DIRTY. REMOVED
FILTER, REPLACED PRIMARY FILTER AND SECONDARY FILTER. PRIMED
SYSTEM AND CRANKED ENGINE. ENGINE RUNS SMOOTHER AND DOES NOT
STUMBLE, WHEN ACCELERATING.

RK5152202	WIF SENSOR.	1
K37-1029	ELEMENT-FUBLACK	1
FF5825NNFLG	FILTER-FUEL	1
RX5461551RXCUM	SENSOR PARTICULATE	1
CX5461551RXCUM	CORE CHARGE	1
CR5461551RXCUM	CORE CHARGE	1-
5575345CUM	HARNESS, 2020 X15 ETR	1
RX5594275NXCUM	SENSOR, POSITION CRANK	1
CX5594275NXCUM	SENSOR, POSITION	1
CR5594275NXCUM	SENSOR, POSITION	1-
RX4326874RXCUM	SENSOR-NITROGEN OXIDE	1
CX4326874RXCUM	SENSOR-NITROGEN OXIDE	1
CR4326874RXCUM	SENSOR-NITROGEN OXIDE	1-
RX4307411RXCUM	ACTUATOR, ETR FUEL CONT	1
CX4307411RXCUM	ACTUATOR, ETR FUEL CONT	1
CR4307411RXCUM	ACTUATOR, ETR FUEL CONT	1-

Total 0

OPERATION 6

COMPLAINT: SHACKLE PINS AND BUSHINGS.
VMRS CODE: 01-016-002-010-03-22
CORRECTION: REPLACE WITH NEW-SHACKLE - FRONT SPRING-FRONT SPRINGS-
MISALIGNED
REPLACED THE FRONT PASSENGER BUSHING AND PIN. STARTED TO
REMOVE THE DRIVER SIDE FRONT. REPLACED ALL THE BUSHING AND
PINS. INSTALLED NEW GREASE FITTING TO EACH PIN. GREASED ALL
THE BUSHING.

Customer Copy

CONTINUED

		Service Date	Invoice Date
		7/24/2023	8/11/2023
RF1135298	CLEANER BRAKE NON-CHLO		
819790	FITTING-GREASE	3	
RFB206006	SPRING SHACKLE BAR	4	
71978IMP	FLAP WHEEL 2"120 GRI	4	
B65-6008	PIN-SPRING THREADED	1	
B65-1008	PIN-THREADED SPRING	4	
B13-1000	BUSHING-PIN SPRING MTB	2	
550027637	GREASE S	6	
		1	
OPERATION 7		Parts	
COMPLAINT: REPLACE BATTERIES		Total Operat	
VMRS CODE: 01-032-001-000-03-44			
CORRECTION: REPLACE WITH NEW-BATTERY & CABLES-BATTERY & CABLES-WORN			
REPLACED BATTERIES.			
	1.0 Hours		
RX31T-950EXCH	BATTERY-STARTING GR31	3	
CX31T-950EXCH	BATTERY-STARTING GR31	3	
YKU234381	COUPON - CLARIOS FREE	3	
CR31T-950EXCH	BATTERY-STARTING GR31	3	
OPERATION 8		Total Op	
COMPLAINT: POLICY ON FRONT COVER LEAKING AND ACCESSORY BELT.			
VMRS CODE: 01-045-002-073-03-51			
CORRECTION: REPLACE WITH NEW-BELT - MULTIGROOVE, SERPENTINE-CYLINDER			
BLOCK & CRANKCASE-INOPERATIVE			
REPLACED A/C BELT AND PLUG FOR FRONT COVER PLATE FOR OIL			
LEAK STEAM OFF AND ROAD TEST ALL OK.			
	3.1 Hours	Labor	
3688113CUM	PLUG-GEAR COVER	1	
D84-1000-6061620	BELT-POLY 6 RIBS X 162	1	
Total Operati			

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CONTINUED

Labor Total
Parts Total
Oil & Grease
Shop Supplies
Coupons
Freight
Machine Charge

SHARES OF TRUCK *

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TOTAL DUE

16,920.74