

Starting Date	Ending Date	Make	Model	Serial Number	Stock Number				
11/20/13	12/31/13	NH	8870	D413356	128393				
Promised				Call When Ready	Deliver?	2nd Serial Number	Usage	Invoice Type	St.#
				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		6164 H	DUPLICATE	11

## DUNCAN ENGINE

The tractor died and will not crank over, may have dropped a valve.

-----  
Brought into shop with forklift. Attempted to start engine. Checked engine oil and found it was overfull. Removed engine oil drain plug, drained oil and found a lot of coolant in pan. Removed injector lines, removed air intake hose and intake manifold. Found debris from pistons in intake. Removed exhaust stack, muffler and exhaust manifold. Inspected and found metal in turbo and in head with a broken valve. Removed hood, removed ac compressor with condenser and side panels. Removed oil cooler and intercooler and radiator. Removed wiring harness from engine, disconnected fuel lines. Removed hood support bracket and air cleaner assembly. Removed starter, overflow tank and alternator. Removed engine, and injection pump. Removed valve cover, rockers, push rods then head. Head and block were destroyed. Assembled engine for core. Got new longblock, installed flywheel with new torque damper. Installed Exhaust manifold, after

<b>LABOR</b>	



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drilling out broken turbo mount studs. Installed new studs, reman turbo and new nuts. Installed reman injectors, intake manifold and return line. Received injection pump from rebuild and installed. Installed new thermostats. Removed components from old engine and installed on new engine. Replaced transmission input seal, seal was leaking. Installed engine in frame. Installed starter, wiring harness, muffler and stack. Installed radiator, intercooler and oil cooler, installed ac compressor and condenser. Installed air cleaner and hoses. Replaced bad water hoses, water filter and fuel filter. Filled engine with oil, filled radiator with new coolant. Cranked engine with fuel solenoid unplugged until oil pressure came up. Bled fuel system and started engine. Installed hood and side panels. Ran engine on dyno for about 2 hrs varying the load and engine speed. Brought back into shop. Tested oil pressure with manual gauge. Replaced oil sender with new unit.

1.40 Troubleshoot engine

33.80 Engine, removed - Replace - with a long block - includes transfer of all previously removed engine components

10 001 AD 40

7.00 Cylinder head - Remove and install - with engine removed

10 101 AA 21

LABOR	
PARTS	
FREIGHT/MILEAGE	
OTHER	
CONSUMABLES/GOV COMPL	
SALES TAX	
TOTAL	
BALANCE DUE	

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2.80 Engine removed - Test on dyno10 001 AD 38

1.40 Troubleshoot engine oil pressure

0.28 Engine oil pressure switch - Replace55 013

AB 12

0.28 Engine coolant fluid filter - Replace10 400

BD 51

1.40 Transmission input shaft sea.

0.98 Coolant thermostats - all - Remove and  
install10 400 BC 30

Removed left wheel, drained planetary, removed steering links, sungear and knuckle. Cut bearing races out with torch, installed new bearings, races, and seals and lower king pin. Installed knuckle, sungear, hub and wheel. Filled planetary and grease king pins. Test drove and checked for leaks.

3.08 Steering articulation pins and bearings - right-hand or left-hand - Remove and install25 108 AG 46

3.08 Planetary final drive - right-hand or left-hand - Disassemble and assemble25 108 AB 30

0.42 Left-hand front wheel and tire assembly - one - Remove and install44 511 AE 10

1.00

ZONE 1 325 CE 11/18/13

Shop Supplies & Gov Compliance

PARTS DISCOUNTS 10%

<b>LABOR</b>	
<b>PARTS</b>	
<b>FREIGHT/MILEAGE</b>	
<b>OTHER</b>	
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LABOR DISCOUNTS 10%

TRUCKING DISCOUNTS FREE TRUCKING

1	NH 87800718BR	REMAN-BA	
CORE	NH 87800718BC	CORE-BAS	
1	NH 87840270R	REMAN-TU	
CORE	NH 87840270C	CORE-TUR	
6	NH 81876871R	REMAN-IN	
CORE	NH 81876871C	CORE-INJ	
1	NH 9825201	DAMPER	
4	NH 87803213	STUD	J6C3
4	NH 87803212	NF NUT	C0615
12	NH 87332791	BOLT	J1C4
1	NH 86500761	SEAL, OI	
1	NH F3NN6784AA	TUBE	1E2G4
2	NH 87803664	THERM	
1	NH 81822547	GASKET	1R2D
1	NH F2NN6N910AA	FERRULE	
6	NH J903380	SEAL	1P3C4
2	JD 6152-21304	716X3	01H3
1	NH 84518337	FILTER/E	M3 & 1D5
1	NH 87840136	FUEL FLT	M5
1	NH 861361	WTR FLTR	M3
-6	NH 81876871C	CORE-INJ	
-1	NH 87840270C	CORE-TUR	
-1	NH 87800718BC	CORE-BAS	
2	NH 83955185	SLEEVE	1P3C3
1	NH 9846567	SLEEVE	1P3C3

LABOR	
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FREIGHT/MILEAGE	
OTHER	
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INVOICE NO. 1W136489-01



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3/8" FUE	2C7
#72CLAMP	1C4D4
HEATER	K2K1
5/16" FU	2C7
M6X16	J5L1
#12CLAMP	1C4D1
3/4 HOSE	2C3
1G ANTIF	44A
PIN, BAL	
SHIM	1R2D
BEARING,	
BEARING,	
CUP&CONE	K2E4
SEAL, OI	K1H2
RETAINER	
RETAINER	
WHL SEAL	K1H1
15W40 BU	9OIL BLDG
COTTER	J1H3
SENDER	J3D3
FAN BELT	C0814
AIR FLTR	5G
AIR FLTR	5E