

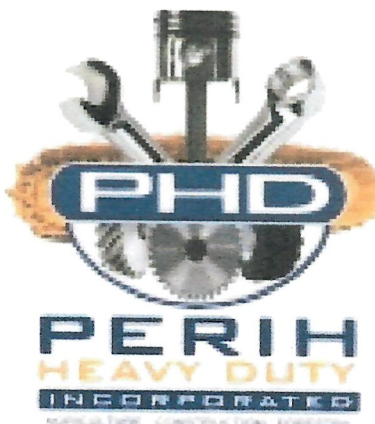
Perih Heavy Duty Inc

RR1

Gilbert Plains, MB R0L 0X0, CA

perihhd@gmail.com

204-648-3122



Invoice: 1695

Date: 11/6/2025

Bill To

Penner Bros Logging

RR#2

Grandview, MB R0L 0Y0, CA

Remit Payment To

Perih Heavy Duty Inc

RR1

Gilbert Plains, MB R0L 0X0, CA

Service Order	Terms	Due Date	Authorizer	Customer PO	Service Writer	Unit #
2069	Net 30	12/6/2025	Lowell Penner		Perih, Steven	

Item	Description	Quantity	Rate	Amount
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Complaint: Diagnose Engine Knocking**Cause:** Customer request

Labor	Correction:	95.00000	\$135.00	\$12,825.00
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Engine / Overhaul / Went to machine in Pine River to diagnose engine knocking. Removed rocker cover and found number 3 push rod on the exhaust valve to have fallen out and the valves on that cylinder seem to be sticking. Severe engine damage found as well as smoking and missing. Advise engine needs to be removed and disassembled. Customer loaded grader and delivered to shop for repair. Get running and drive grader into shop for repair. Remove the muffler and air intake. Remove the hood to gain access to the engine. Drain the coolant and the transmission oil from the machine. Remove upper and lower radiator hose along with the heater hoses and the circulating heater hoses, and remove the circulating heater. Remove front plastic shield from the front of the motor along with the bracket that it bolts to. Remove the front engine balancer. Remove fuel feed and return hoses as well as the charge pipes. Remove a/c compressor and the dryer and move them out of the way.

Remove the dipstick tube along with the suction tube from the transmission. Supported transmission and unbolted from bell housing as well as engine mounts. Hoisted engine from machine and set on stand for disassembly. Stripped engine to inspect and determine root cause of engine failure. Found that someone has just recently been in the engine and has had the rocker shaft off as well as replaced one injector. Injector had been replaced on number 6 cylinder.

Valve train failure was on 3. Removed piston on number 6 cylinder as it showed signs of ring failure. Once removed the upper ring was broken. Cylinder had a large amount of damage. Speculate that the previous shop had replaced the injector on number 6 cylinder to repair a miss that was in fact a piston ring failure and low compression. Also 6 of the 12 camshaft followers had large amounts of wear and damage. 2 more followers had completely failed and caused severe camshaft damage.

This was what has caused the push rod to fall out on cylinder 3. It was also clear that the valve adjustment screw on cylinder 3 was set a lot different than the rest showing someone had previously been there and attempted to compensate for damage. Made

parts list and discussed options with customer. Decided to rebuild engine with new Deere parts. Stripped engine down to clean block and sent head away for repair. Installed new main bearings and plastigauged to .002". Installed new liners, packings and pistons from kit. Liner protrusion measures.004". Installed new rod bearings plastigauged to .0015". Installed oil pump and tubes and new grader oil pan gasket. Installed new camshaft as well as all new cam followers. Transfer cam gear and time engine. Time high pressure fuel pump and install front engine cover with water pump. Installed thermostat housing and conditioned head with new gasket as well as new updated cylinder head bolts. Torque to spec. Installed intake manifold with new updated gasket. Installed previously removed fuel injectors with new feed tubes. Installed 2 new push rods and rocker shaft with new hardware. Set valve clearance to spec as per TM. Installed injector harness and rocker cover. Installed fuel lines and exhaust manifold with new gaskets. Installed new turbocharger as the one removed was in very poor condition. Installed EGR cooler. Installed front engine seal and reinstalled balancer. Installed engine wiring harness. Installed new flywheel housing gasket engine mount brackets. Clean transmission housing and tap bell housing bolts. Hoist engine into place in grader and seal mating surface with 515. Installed engine mounts and installed all previously removed components. Attached wiring and hoses. Installed transmission suction tube and cleaned screen as well as dipstick tube. Fill transmission with new oil and engine with new JD break in oil. Filled with new coolant and replaced engine oil filter. Installed hood all shields and panels. Charged battery and primed fuel system. Got engine running and checked for leaks. Alternator was making noise. Removed and customer took in for repair and brought back, Installed repaired alternator. Test drive grader to check operation and get up to running temp. Grader runs as it should and customer picked up for sale. - Completed: 11/6/2025

Parts	TRP ELC 50/50 Coolant	13.00000	\$19.50	\$253.50
Parts	John Deere Break-In Plus Oil 10W30 (4L) ***05/25	3.00000	\$50.61	\$151.83
Parts	John Deere Break-In Plus Oil (5 Gallon) ***05/25	1.00000	\$228.46	\$228.46
Parts	Phillips Trans Hydraulic 10L (2.5G) ***07/25	3.00000	\$60.02	\$180.06
Parts	Cam Follower Roller	12.00000	\$71.39	\$856.68
Parts	Camshaft	1.00000	\$1,554.88	\$1,554.88
Parts	Fitting	6.00000	\$85.80	\$514.80
Parts	O-Ring	6.00000	\$1.34	\$8.04
Parts	Washer	6.00000	\$0.80	\$4.80
Parts	Engine Overhaul Kit	1.00000	\$10,683.68	\$10,683.68
Parts	Reman Turbocharger	1.00000	\$4,358.24	\$4,358.24
Parts	Screw	6.00000	\$7.11	\$42.66
Parts	Gasket	1.00000	\$227.60	\$227.60
Parts	Filter Kit	1.00000	\$52.44	\$52.44
Parts	Bolt Kit	1.00000	\$326.34	\$326.34
Parts	Washer	2.00000	\$0.80	\$1.60
Parts	Cap Screw	6.00000	\$15.83	\$94.98
Parts	Gasket	1.00000	\$114.18	\$114.18
Parts	Bushing	1.00000	\$36.30	\$36.30
Parts	Cylinder Head Work	1.00000	\$425.00	\$425.00
Parts	Push Rod	2.00000	\$29.14	\$58.28
			Subtotal	\$32,999.35
	Freight	1.00	\$188.74	\$188.74

Unit: VIN: DW872GP627319
John Deere 872GP
Engine: 14,658 Hours

Labor	\$12,825.00
Parts	\$20,174.35
Shop Supplies	\$424.26
Pre-Charge Subtotal	\$33,423.61
Freight	\$188.74
GST (5% of \$33,612.35)	\$1,680.62
PST (7% of \$33,612.35)	\$2,352.86
Total	\$37,645.83
Payments & Credits	\$0.00
Balance Due	\$37,645.83

GST# 753299528

Amount due and payable 30 days after invoice date. Past due interest 2% per month (24% per annum) charged in all overdue accounts.