

Perih Heavy Duty Inc
RR1
Gilbert Plains, MB R0L 0X0, CA
perihhd@gmail.com
204-648-3122



Invoice: 665
Date: 10/21/2022

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 #
1459	Net 30	11/20/2022	Lowell Penner		Perih, Steven	

Item	Description	Quantity	Rate	Amount
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Complaint: Diagnose Engine Issue and Prepare Dozer For Low Bedding

Cause: Customer request

Labor	Correction: Engine / Lubrication / Went to machine to diagnose problem. Removed panels to test oil pressure. Engine would not turn over easily. Boosted and had line off at turbo and got engine to momentarily run, there was zero oil pressure. Need to come back to asses damages and prepare for possible loading .Drove out to dozer a second time and dropped two skid plates to gain access to oil pan. Drained oil and coolant into pales and removed front section of oil pan and found lots of steel shavings in bottom of pan and found the oil pump gear was not solid to shaft and was not turning pump. Looked at crank shaft and seen that number 2 connecting rod and main cap looked dry. Made the decision that the job is best done at the shop and we will prep the machine to be low bedded out. Reinstalled stump pans loosely and blocked up blade and removed C-Frame mounts and removed lift cylinders from upper trunnions and left with blade. Removed both axles from final drives to tow unit back out of C-Frame and onto lowbed. Once the axles were removed we noticed that both axle seals were completely torn and mostly missing. They will need to be replaced after engine is repaired. Lifted up ripper with skidder and chained it up to ROPS. Customer will load and bring to shop. Unloaded dozer from lowbed and brought into shop - Completed: 10/12/2022	16.50000	\$125.00	\$2,062.50
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Subtotal \$2,062.50

Complaint: Remove and Install Engine For Overhaul

Cause: Customer request

Aol-5

Item	Description	Quantity	Rate	Amount
Labor	Correction: Engine / Overhaul / Pulled dozer off of low bed and lined up with shop door to be pushed in. Removed all extremities from engine and removed fan shroud to and a/c condenser from nose cone to remove nose cone. Removed fan hub and hydraulic oil cooler from nose cone. Removed all rad hoses and lifted nose cone to see if pins would move all moved except for one. Pushed dozer into shop and removed track pads to access pins in order to use hydraulic jack to remove stubborn pin. Removed nose cone from dozer. Removed all fuel and electrical from engine and floor plates from cab to gain access to hydraulic lines from pumps. Removed all 3 remaining stump pans to gain access to drive shaft and torque converter lines. Removed all lines from torque converter and hydraulic pumps and removed front and rear engine mounts. Rigged up crane to engine and lifted out of mounts and set onto stands in front of dozer for disassembly. Replaced front engine mount as it was badly cracked. Once rebuilt we installed engine back in to machine frame and attached all hoses and replaced all hoses that were leaking or in poor condition. Replaced all o-rings on all hoses that were touched. Attached drive line and all removed lines, hoses, wires, and parts. Filled engine with fluids and changed all filters. Replaced all rad hose pieces and guarded and tied up all loose parts. Installed nose cone and front auxiliary hoses. Primed fuel system and got machine running. Checked for leaks and ran engine up to operating temp. Vacuumed and charged a/c to spec. Blows cold and cycles well. While pans were removed we cleaned them all out. Installed all panels, shields, muffler, cab components, and stump pans. Topped up fluids. - Completed: 10/12/2022	96.00000	\$110.00	\$10,560.00
Parts	Delo 50/50 Coolant	24.00000	\$19.50	\$468.00
Parts	Track Bolt	12.00000	\$9.72	\$116.64
Parts	Track Nut	12.00000	\$5.56	\$66.72
Parts	Pin	2.00000	\$135.80	\$271.60
Parts	Switch	1.00000	\$129.42	\$129.42
Parts	Hose	1.00000	\$304.83	\$304.83
Parts	Oil Filter	1.00000	\$27.74	\$27.74
Parts	Fuel Filter	1.00000	\$25.24	\$25.24
Parts	Coolant Filter	1.00000	\$15.28	\$15.28
Parts	Air Filter	1.00000	\$85.8055	\$85.81
Parts	Chevron 15W40 5 Gallon	2.00000	\$89.50	\$179.00
Parts	Chevron 15W40 1 Gallon	3.00000	\$28.42	\$85.26
Parts	-16 4100psi Arctic Hydraulic Hose	2.50000	\$16.058	\$40.15
Parts	1620 Code 61 45 Degree Flange Crimp Fitting	1.00000	\$81.0405	\$81.04
Parts	1616 Code 61 Flange Crimp Fitting	1.00000	\$53.487	\$53.49
Parts	-16 Flange O-Ring	1.00000	\$1.50	\$1.50
Parts	-20 Flange O-Ring	1.00000	\$1.75	\$1.75
Parts	-06 5000psi Arctic Hydraulic Hose	4.00000	\$4.928	\$19.71
Parts	0606 O-Ring Face 90 Degree Female Crimp Fitting	1.00000	\$19.2375	\$19.24

Item	Description	Quantity	Rate	Amount
Parts	0606 O-Ring Face Female Crimp Fitting	1.00000	\$10.125	\$10.13
Parts	-20 100R12, 3050 psi Hydraulic Hose	2.00000	\$29.722	\$59.44
Parts	2024 Code 61 Flange Crimp Fitting	1.00000	\$112.644	\$112.64
Parts	2024 Code 61 60 Deg Flange Crimp Fitting	1.00000	\$122.823	\$122.82
Parts	-24 Flange O-Ring	2.00000	\$2.25	\$4.50
Parts	-16 4100psi Arctic Hydraulic Hose	2.50000	\$16.058	\$40.15
Parts	1616 Code 61 45 Degree Flange Crimp Fitting	2.00000	\$54.9855	\$109.97
Parts	-16 Flange O-Ring	2.00000	\$1.50	\$3.00
Parts	R-134a Refridgerant	4.00000	\$22.00	\$88.00
			Subtotal	\$13,103.07

Complaint: Overhaul Engine**Cause:** Customer request

Labor	Correction: Engine / Overhaul / Set engine on four jack stands and removed the rest of the oil pan and stiffener plate to inspect crank shaft damage. Had a very hard time to remove number 2 main bearing cap and bearing as the bearing had spun badly and basically welded it self to the crankshaft. Also removed number 2 connecting rod and found that the bearing had also spun. Found that the cause of the failure was the oil pump siezed and the drive gear broke off causing no oil pressure. Removed intercooler and rocker arm boxes. Removed all fuel lines to injectors and removed rocker arm assemblies and valve bridges. Removed alternator and bracket and removed a/c compressor and strap from timing gear cover to head. Removed all head bolts and separated the head gasket seal and removed head from engine. Inspected head and head gasket found no head gasket failure and no damage to the head. Set head onto pallet to be sent away to get checked over cleaned carbon rings on the tops of the cylinder liners and removed pistons and liners from engine block. Removed timing gear cover and timed engine to number 1 and aligned all timing marks on gears. Removed all timing gear train and fuel pump from rear of timing plate. Removed camshaft retainer and removed camshaft from block. Removed hydraulic pumps from torque converter housing. Removed torque converter housing from engine as well. Removed flywheel from flywheel housing and removed all rear gear train and flywheel housing from engine block. Flipped engine on to flywheel end and set onto blocks. Removed all main bearing caps and removed crank shaft from block. Installed all main bearing caps in respective locations. Completely stripped all components from block and set onto pallet to be shipped off for repair to number 2 main bearing journal. Cleaned all external and internal parts. Wiped down block and un packaged parts. Installed plate on side of block with new gasket and flipped block over onto head and removed main bearing caps and found that number 5 and number 4 main bearing caps were mixed up originally.	165.00000	\$110.00	\$18,150.00
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Item	Description	Quantity	Rate	Amount
	Lifted new crank into parts washer and washed off all packing wax and blew out all oil journals of wax. Transferred crankshaft gear from old crank to the new one. Installed new main bearings into block and onto caps and set crank shaft into block. Torqued main bearings to spec and plastigauged number 2,4,5 found that the oil clearance for #2 was .002 and #4 and #5 was .0015. Crank shaft rotates freely after all torqued. Flipped engine onto pan rails and installed cylinder liners with new packings and installed shim and spacer plate and measured liner protrusion, all liners were and .003".			
	Removed shim and spacer plate and installed liners into block. Flipped engine onto flywheel end and installed rings onto pistons and pistons onto connecting rods. Assembled all 6 connecting rods onto new pistons. Set ring gap to spec and installed rings onto pistons. Installed piston assemblies into liners. Plastigauged connecting rod bearings and they were at .0015". Installed new idler gear bushings in gear train and installed removed camshaft and timed engine.			
	Disassembled rear gear train and installed all new bushings in idler and drive gears as well as one new stub shaft as they were all damaged from the oil pump failure. Installed spacer plate, shim and new head gasket. Set cylinder head on and torqued to spec with existing head bolts. Installed valve train and set valve clearances. Installed new injectors in head and attached fuel lines, Installed fuel injection pump and times gear, pump and installed advance mechanism.			
	Existing exhaust manifold was severely warped and could not be used. Installed new 3 piece manifold and sealed with new manifold installed kit and sealed joints in manifold with a special sealant epoxy. Installed all block components, plugs, lines, fittings and all other removed components. Installed stiffener plate and new CAT oil pump with new drive gear and hardware. Installed 3 piece oil pan with new gaskets. Installed injection pump lines, new water pump, oil cooler and thermostat.			
	Installed new transmission cooler because it was coming apart internally. The rubber was deteriorated and plugging all cooling passages. Installed torque converter and housing. Installed hydraulic pumps as well. Installed new turbocharger with new mounting hardware. Installed rocker cover and fan drive assembly Installed existing belts and a/c compressor. - Completed: 10/12/2022			
Parts	Manifold End	2.00000	\$244.09	\$488.18
Parts	Exhaust Manifold Center	1.00000	\$422.29	\$422.29
Parts	Thrust Ring	4.00000	\$55.28	\$221.12
Parts	O-Ring	2.00000	\$17.23	\$34.46
Parts	Cooler	1.00000	\$1,595.412	\$1,595.41
Parts	Bearing	2.00000	\$81.03	\$162.06
Parts	Seal	2.00000	\$3.11	\$6.22
Parts	Ring	4.00000	\$38.38	\$153.52
Parts	Seal	1.00000	\$334.44	\$334.44
Parts	Bearing	2.00000	\$391.56	\$783.12
Parts	Bearing Sleeve	2.00000	\$133.45	\$266.90
Parts	Bearing	1.00000	\$68.91	\$68.91
Parts	Gasket	2.00000	\$5.67	\$11.34
Parts	Gasket	1.00000	\$4.28	\$4.28

Item	Description	Quantity	Rate	Amount
Parts	Gasket	2.00000	\$9.49	\$18.98
Parts	Seal	1.00000	\$40.85	\$40.85
Parts	Seal	1.00000	\$21.60	\$21.60
Parts	Bearing	2.00000	\$130.21	\$260.42
Parts	Bearing	1.00000	\$69.16	\$69.16
Parts	Seal O-Ring	1.00000	\$6.664	\$6.66
Parts	Bolt	1.00000	\$20.87	\$20.87
Parts	Seal O-Ring	2.00000	\$8.1536	\$16.31
Parts	Seal O-Ring	1.00000	\$8.9376	\$8.94
Parts	Oil Drain Plug	1.00000	\$133.77	\$133.77
Parts	Seal	1.00000	\$3.29	\$3.29
Parts	Seal O-Ring	1.00000	\$25.14	\$25.14
Parts	Washer	4.00000	\$2.36	\$9.44
Parts	Seal	3.00000	\$5.42	\$16.26
Parts	Seal O-Ring	1.00000	\$2.464	\$2.46
Parts	Seal O-Ring	1.00000	\$3.27	\$3.27
Parts	Seal O-Ring	1.00000	\$7.32	\$7.32
Parts	Nut	2.00000	\$5.67	\$11.34
Parts	Seal O-Ring	1.00000	\$7.60	\$7.60
Parts	Flange	1.00000	\$16.65	\$16.65
Parts	Seal O-Ring	2.00000	\$6.82	\$13.64
Parts	Seal	1.00000	\$10.33	\$10.33
Parts	Seal O-Ring	2.00000	\$12.52	\$25.04
Parts	Seal	1.00000	\$13.57	\$13.57
Parts	Hex Bolt	1.00000	\$1.44	\$1.44
Parts	Seal O-Ring	1.00000	\$23.34	\$23.34
Parts	Bearing Sleeve	2.00000	\$157.64	\$315.28
Parts	Idle Shaft	1.00000	\$694.16	\$694.16
Parts	Bearing	2.00000	\$81.03	\$162.06
Parts	Seal	1.00000	\$64.45	\$64.45
Parts	Gasket	1.00000	\$4.68	\$4.68
Parts	Pin	2.00000	\$487.92	\$975.84
Parts	Seal	1.00000	\$36.04	\$36.04
Parts	Oil Pump	1.00000	\$1,535.51	\$1,535.51
Parts	Gear Drive	1.00000	\$789.12	\$789.12
Parts	Washer	1.00000	\$4.13	\$4.13

Item	Description	Quantity	Rate	Amount
Parts	Sleeve	2.00000	\$43.44	\$86.88
Parts	Bolt	4.00000	\$19.51	\$78.04
Parts	Key	1.00000	\$1.29	\$1.29
Parts	Lock Nut	4.00000	\$11.0544	\$44.22
Parts	Bolt	4.00000	\$10.13	\$40.52
Parts	Injector	6.00000	\$195.00	\$1,170.00
Parts	Crankshaft	1.00000	\$4,500.00	\$4,500.00
Parts	Water Pump	1.00000	\$455.00	\$455.00
Parts	Damper	1.00000	\$625.50	\$625.50
Parts	Turbo (new)	1.00000	\$3,150.00	\$3,150.00
Parts	Connecting Rod	1.00000	\$375.00	\$375.00
Parts	Engine Kit	1.00000	\$5,800.00	\$5,800.00
Parts	Pin Bushing	5.00000	\$19.50	\$97.50
Parts	Gasket	6.00000	\$9.00	\$54.00
Parts	O-Ring	6.00000	\$3.00	\$18.00
Parts	Oil Cooler	1.00000	\$695.00	\$695.00
Parts	Valve Keeper	48.00000	\$2.00	\$96.00
Parts	Head Valve Job	1.00000	\$375.00	\$375.00
Parts	Head Work	1.00000	\$450.00	\$450.00
Parts	Pins Fitted	5.00000	\$80.00	\$400.00
Parts	Check Rods	5.00000	\$25.00	\$125.00
Parts	Precups Clean and Install	6.00000	\$32.50	\$195.00
Parts	Heli Coil Thread Insert	1.00000	\$19.41	\$19.41
Parts	Exhaust Putty	1.00000	\$171.68	\$171.68
Parts	3" Silicone Radiator Hose	12.00000	\$4.66	\$55.92
Parts	2 1/2" Silicone Radiator Hose	12.00000	\$4.00	\$48.00
Parts	-12 Flat Face O-Ring	6.00000	\$1.25	\$7.50
Parts	-16 Flat Face O-Ring	4.00000	\$1.25	\$5.00
Parts	-16 Flange O-Ring	4.00000	\$1.50	\$6.00
Parts	-24 Flange O-Ring	3.00000	\$2.25	\$6.75
Parts	-06 Flat Face O-Ring	4.00000	\$1.00	\$4.00
Parts	Thermostat	1.00000	\$116.8832	\$116.88
Parts	Exhaust Manifold Hardware Kit	1.00000	\$525.00	\$525.00
Parts	Bearing	6.00000	\$64.0528	\$384.32
Parts	Bearing	1.00000	\$68.9136	\$68.91
Parts	Sleeve and Line Bore Cylinder Block	1.00000	\$3,137.54	\$3,137.54

Item	Description	Quantity	Rate	Amount
			Subtotal	\$51,460.07
Complaint: Repair Equalizer Bar Pins and Bushings				
Cause: Customer request				
(Inspection)				
Labor	Correction:	32.00000	\$110.00	\$3,520.00
	Chassis / Chassis / Removed retainer plate from rear of hard bar and tried to heat and pull pin from bushing but could not get pin to move. Oxy lanced out center pin and pulled pin out of frame with hydraulic press. Used lots of rods and oxygen to completely lance hole through pin and still required lots of force to press out. Used jack and blocks to carefully lower machine down to lift front end off of the hard bar. Cut off retainer nuts on both sides of the hard bar to remove outer pins and lifted hard bar out of of ears and set onto ground using crane. Pulled hard bar out and had a look at the outer pin bores and found that the bearings had worn out so bad the the hard bar had to be sent to be line bored. Installed new seals into hard bar as well as all new bushings and bearings. While nose cone was removed we replaced the two bushings and one pin in the frame as it was pretty worn out as well. Removed bumper pads and straightened supports. Sent hard bar into machine shop for it to be repaired. Got it back and installed in machine with one CAT pin and 2 aftermarket ones. Installed new bolts, washers, and nuts. Set machine back down into position. - Completed: 10/12/2022			
Parts	Bolt	2.00000	\$57.9488	\$115.90
Parts	Repair Hard Bar	1.00000	\$3,350.00	\$3,350.00
Parts	Honed Tubing	4.00000	\$9.34	\$37.36
Parts	Pin	1.00000	\$425.32	\$425.32
Parts	Pin	2.00000	\$208.24	\$416.48
Parts	Seal	4.00000	\$29.73	\$118.92
Parts	Spacer	1.00000	\$92.26	\$92.26
Parts	Grease Nipple	2.00000	\$3.27	\$6.54
Parts	Nut	4.00000	\$8.98	\$35.92
Parts	Washer	4.00000	\$6.51	\$26.04
Parts	Spacer	1.00000	\$92.26	\$92.26
Parts	Washer	2.00000	\$43.35	\$86.70
Parts	Bolt	2.00000	\$72.87	\$145.74
Parts	Mount	1.00000	\$647.76	\$647.76
			Subtotal	\$9,117.20

Complaint: Install Espar Heater**Cause: Customer request****(Inspection)**

Item	Description	Quantity	Rate	Amount
Labor	Correction: Equipment / Equipment / Install Espar heater and plumb while engine is out. Route and install timer in cab and wire to machine. Used all silicone hose and spring clamps. Guarded hoses and mounted heater to LH lower side panel. Installed filter to intake pipe as well. - Completed: 10/12/2022	5.00000	\$110.00	\$550.00
Parts	Easy Start Pro	1.00000	\$256.72	\$256.72
Parts	24V Espar Heater Kit	1.00000	\$1,375.95	\$1,375.95
Parts	3/4 Silicone Radiator Hose	13.00000	\$6.50	\$84.50
Parts	Spring Clamp 27mm 3/4	6.00000	\$4.92	\$29.52
Parts	Black Iron Nipple 1/2 MPT x 3	1.00000	\$3.24	\$3.24
Parts	Espar Filter	1.00000	\$12.50	\$12.50
Parts	3/4 Brass Hose Barb	1.00000	\$8.00	\$8.00
Parts	3/4" x 3/4" Brass Hose Barb Fitting	1.00000	\$5.66	\$5.66
Parts	Black Iron Close Nipple 1/2 MPT	1.00000	\$2.58	\$2.58
Parts	Black Iron Tee 3/4 FPT	1.00000	\$4.72	\$4.72
			Subtotal	\$2,333.39

Complaint: Replace Axle Seals**Cause:** Customer request

(Inspection)

Labor	Correction: Rear Axle/Final Drives / Final Drive / Drained oil from final drives and removed final drive cover. Removed axle shafts and planetary assemblies. Removed old seals and installed new. Installed in reverse order and used new o-rings on cover. Filled with new TO-4 30w oil. Performed procedure on other side as well. - Completed: 10/12/2022	5.50000	\$110.00	\$605.00
Parts	Seal	2.00000	\$35.00	\$70.00
Parts	Seal O-Ring	2.00000	\$28.16	\$56.32
Parts	TO-4 30W 5 Gallon	3.00000	\$95.44	\$286.32
			Subtotal	\$1,017.64

Drive to unit

Labor	Drive to unit (Service Call)	5.50000	\$135.00	\$742.50
			Subtotal	\$742.50

Freight	1	\$1,256.71	\$1,256.71
Discount Labour On All Segments	1	-\$10,000.00	-\$10,000.00

Unit: VIN: 7XM01549
 CAT D8R
 Engine: 13,420 Hours

Labor	\$36,190.00
Parts	\$43,646.37
Shop Supplies	\$800.00
Pre-Charge Subtotal	\$80,636.37
Freight	\$1,256.71
Discount Labour On All Segments	-\$10,000.00
GST (5.0000% of \$71,893.08)	\$3,594.65
PST (7.0000% of \$71,893.08)	\$5,032.52
Total	\$80,520.25
Payments & Credits	\$30,000.00
Balance Due	\$50,520.25

Payment Information

Date	Payment #	Method	Reference #	Amount
9/29/2022	3422797	Cheque		\$30,000.00

GST# 753299528