

Serial Number: TWX00768 Product Family: LARGE WHEEL LOADER

Model: 988K SMU / Hours: Year: 2015

SERVICE HISTORY (212 Records)

Invoice Date	Invoice Type	SMU / Hours	Description	Notes
Apr 21, 2026	Service	34,011	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Apr 21, 2026	Service	34,011	Troubleshoot Parking Brake	Complaint: park brake not engaging. happened once And then started working. not able to confirm Customer complaint. Cause: unknown at this time. leaning towards the Service bulletin. Correction: 3/9/26 downloaded psr. updated Applicable software, transmission, implement and Indication display. tested park brake, ok at this Time. logged code for switch. talked with mick, he Stated to order the switch and we can try that for Now. if problem continues i would pursue the Following. product support program for reworking The park brake valve on certain 988k and 988k xe Large wheel loaders (uebe2529-01) cleaned up and Drove back to shop. 3/11/26 drove to machine location. talked with Supervisor. waited for machine to be available. Installed new park brake rocker switch. operated Several times, all working at this time. Contingent damage: none Complication: not able to recreate fault e706(3) Park brake disabled. Repair complete
Apr 21, 2026	Service	34,011	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Apr 21, 2026	Service	34,011	Install Software	Updated software Implement, indication display and transmission. Was not able to update object detection
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Mar 13, 2026	Service	34,011	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Mar 13, 2026	Service	34,011	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Mar 13, 2026	Service	34,011	Install Software	Updated software Implement, indication display and transmission. Was not able to update object detection
Mar 13, 2026	Service	34,011	Troubleshoot Parking Brake	Complaint: park brake not engaging. happened once And then started working. not able to confirm Customer complaint. Cause: unknown at this time. leaning towards the Service bulletin. Correction: 3/9/26 downloaded psr. updated Applicable software, transmission, implement and Indication display. tested park brake, ok at this Time. logged code for switch. talked with mick, he Stated to order the switch and we can try that for Now. if problem continues i would pursue the Following. product support program for reworking The park brake valve on certain 988k and 988k xe Large wheel loaders (uebe2529-01) cleaned up and Drove back to shop. 3/11/26 drove to machine location. talked with Supervisor. waited for machine to be available. Installed new park brake rocker switch. operated Several times, all working at this time. Contingent damage: none Complication: not able to recreate fault e706(3) Park brake disabled. Repair complete
Feb 06, 2026	Parts			
Jan 28, 2026	Parts			

Jan 26, 2026	Parts			
Jan 26, 2026	Parts			
Jan 26, 2026	Parts			
Sep 18, 2025	Parts			
Sep 11, 2025	Service	32,537	Daily Truck	Travel to & from
Sep 11, 2025	Service	32,537	Troubleshoot Clean Emissions Module	<p>Complaint: machine derated Cause: active def quality and data link error Codes. likely but not limited to def quality Sensor issue in the def header. def header updated Part and software. Correction: arrived to site, located machine. Connected cat et and verified codes. removed Access panel, no obvious external defects. hose 3989455 retaining clip was missing. i secured with A zip tie temporarily. updated software in the Engine and def control module to latest software. Performed regeneration system functional test. Test took 45 minutes, no issues. codes cleared Themselves. talked with customer shift manager, And told them the machine is usable, however we Will return with a replacement def header and hose To complete an appropriate repair. --2208-- 2351...btn...8/19/25...got the new header and def Hose from the warehouse off the shuttle...traveled To the machine at the billerud paper mill in Escanaba mi...checked in with the equipment shop, They pulled the machine from production...prepared The machine for service...removed the hand railing From the left rear...removed the fire Extinguisher and mount from off the left rear Cover panel...removed the def controller panel and Removed the def filler panels...removed the left Rear step panel...cleaned the top of the def tank Of dirt and debris with brake clean and compressed Air...clamped off the coolant hoses and removed The def heated lines...disconnected the harness Connectors for the manifold and the inner heated Def line...as per manifold (def heater) - remove And install (kenr6486-07). removed the def Manifold...cleaned the mounting surface...did not Receive a new gasket nor do i have one on the Truck...cleaned the gasket up and assembled the Machine back together in reverse order...performed The aftertreatment functions test, Success...cleared all of the faults and logs, Pulled a product status report...released machine Back to service... Contingent damage: none Complication: had to cut off the protective tab For the center mount of the hand railing due to Previous damage done preventing access to the Mounting bolts...had to remove the fire Extinguisher mounting bracket in another way, Through bolts and nuts not accessible, installed Rubber squishing mounts to resecure the bracket...</p>
Sep 11, 2025	Service	32,537	Daily Truck	Travel to & from

May 20, 2024

Parts

May 10, 2024

Service

30,016

Troubleshoot Fault Code

Complaint: machine in d-rate Cause: Correction: 04/13/24 tdc
 1989 drove to machine Location, located machine. plugged into e.t. Inspected codes. code for low aftertreatment Concentration was present. inspected def tank, Tested quality of def. all checked out fine. would Not let me perform any troubleshooting Procedures, machine kept turning off. was getting Late, notified operator i would return next week With parts. ordered parts. packed up tools drove Home. Tdc 04/16/24 1989 drove to machine location, Located machine, inspected machine, plugged into E.t. same code (e1364 low aftertreatment #1 def Concentration) pulled up troubleshooting procedure On cat sis. checked nox sensors, checked def Fluid level. was not full added fluid to full, def Gauge level worked. checked quality of def fluid. Checked def injector and line going from nozzle To tank. blew line out and made sure there was Nothing blocking line. at this time computer shut Off, restarted computer and could not log back Into sis. had a new def pump on my truck, removed Old pump and installed new one. performed def Dosing system verification test. code e1364 still Present. still could not log back into sis, Decided to go through and check connection on def System. pulled def lines out inspected and blew Out. code e1364 would not go away. was getting Late, packed up tools, notified operators. signed Out gate. drove home.

May 10, 2024

Service

30,016

Daily Truck

Escanaba paper mill Us highway 41,and brebner rd
 Negaunee Mi 49866 906-475-4191

May 10, 2024

Service

30,016

Troubleshoot Engine

Complaint: machine in d rate BI 2574 4/18/24.....drove to machine location Once i had details on work performed, signed in At shop, located machine and hooked up et, found The scr inducement was at level 3, soot load was At 0, had same codes that machine has had for J1939 fault associated to object detection, also Had fault for ground level shutoff voltage below Normal, tested switch and it did not toggle, Machine did still start, had to remove the panels That cover the def components, pump and tank, Found the switch was broken off, attempted to Begin troubleshooting the existing emissions fault And was unable to do any tests due to the switch Condition, looked up schematic to try to jumper Switch, was not able to, remembered there was an Old 988 onsite, located machine and found it had The switch, removed switch and installed onto T270, fault code was resolved, looked up fault Code troubleshooting for e1364-2 decided to run Aftertreatment functionality test because previous Tech had computer issues, test failed to Complete, checked def level and temp, both Readings on dash and et were correct, checked def Quality with refractometer and it was in spec, i Know that the tank was recently flushed when the Manifold was installed, checked def quality sensor Status in et and it was not installed, this was Correct, no action required, performed a def Dosing verification test while looking for leaks In def system, no leaks found, lines not kinked And in good condition, pump pressures met spec, 130 psi and -4 psi during line purge, pump was Working correctly, performed aftertreatment nox Sensor functionality test, the test took 45 Minutes but passed, new nox sensor installed with New engine worked as they should, reached out to Tc but both were unavailable at the time, sent out Email with psr for them to look over, removed def Injector and was going to perform def system Accuracy test but the exhaust temp was 100 degrees To hot, the injector was covered in hardened def Solution, i had a def injector in truck and it was Faster to just swap out injector than wait for Engine to cool, installed injector and also Checked def injector line from pump to injector And it had no obstructions, checked for exhaust Leaks with engine running, found none and no signs Of soot from exhaust leaks, performed Aftertreatment system functionality test, test Failed and did not have indication as to why it Failed, not common, last steps in troubleshooting Procedure are to inspect and possibly replace Exhaust mixer and scr catalyst, got call back from Tc eugene, and he advised that the scr catalyst Should have been replaced with new engine rebuild, Reached out to supervisor and had the history of Machine and recent engine rebuild and install Looked up, the scr had not been replaced and might Be original equipment with 30,000 hours, scr is In store and available, cost is roughly \$20,000 And supervisor will need to have job estimated and Approved before work can be completed. Tc eugene, and he advised that the scr catalyst Should have been replaced with new engine rebuild, Reached out to supervisor and had the history of Machine and recent

replaced and might Be original equipment with 30,000 hours, scr is In store and available, cost is roughly \$20,000 And supervisor will need to have job estimated and Approved before work can be completed. Installed all covers and tied wires that had been Removed for inspection, placed loto tag on machine And turned off master switch, cleaned up work Area and tooling, attempted to unplug the object Detection device at rear of machine hoping that Would clear the j1939 abnormal update fault and it Did not, put detection device back in place, i Will need to look into this fault code further. 2574 4/22/24 returned to machine with parts that May be required for repair, signed in at shop, Went to machine and removed panels and hooked up Et, chris parsons fabick tc came to sight to Assist with troubleshooting, began by resetting All cem devices in et, scr, doc and dpf... Following instructions in sis, performed am ash Service regen but failed due to engine shutting Down, changed engine idle shutdown in et so it Would not shut down with future tests and Procedures, performed aftertreatment functionality Test and it failed, stating the reason for Failure was active fault code present, tried to Clear the fault with factory settings, that did Not work, rechecked def lines for obstruction and Blew them out, performed a def system accuracy Test after removing def injector and setting up Cup to measure and view atomized spray, spray Looked good, amount of def was in spec, def pump Pressures were in spec, used borescope to inspect Mixer, looked very clean before and after mixing Baffles, keyed off machine and replaced injector, Tc advised after looking at documented dsn reports That we should replace nox sensors even if they Passed test because all items were in spec, Replaced nox sensors and replaced ties and clamps, Keyed machine back on and before running used Factory pass codes to clear fault code and code Cleared, ran machine and performed functionality Test, test very quickly passed with success, Performed manual regen and that finished with Success, replaced panels and looked into the vims Error codes, was unable to connect to vims or even See machine reporting, this will require Additional troubleshooting and not a priority to Operation, also looked into the j1939 fault on the Object detection, software was outdated and Required update and might clear code, looked up Procedure in sis and found proper com cord to Communicate with device, downloaded updated Software as well as blanking software, hooked up Via winflash on ethernet, loaded blanking software And flashed, loaded current software and keyed Cycled machine, software update was successful, But code was still active, had terminating Resistor that is often the cause for this type of Fault, removed detection device on rear of machine And gained access to the resistor on the harness, Replaced with new unit, key cycled machine and The code was still active, will need to do Additional troubleshooting and check harness point To point, this fault also did not keep machine From operating, cleaned work area and tooling, Took psr, wrote

Date	Type	Code	Description	Details
May 10, 2024	Service	30,016	Troubleshoot Fault Code	<p>Complaint: fault code present for torque converter Pedal requiring calibration Cause: pedal pivot points worn and corroded, failed Sensor in pedal assembly Correction: bl 2574...4/10/24 drove to machine Location and signed in as instructed, waited for Machine to be downed as it was being used, Operator spoke to me about the pedal "not feeling Right" i had a new sensor for the pedal Calibration fault and removed existing sensor and It was bad, while working in the area i did notice Heavy corrosion at the pivots and the roller Assembly on pedal, i used penetrating oil and Worked parts in place, some improved and others Did not, i have seen this on other machines and Had to replace pedal assembly, finished sensor Install and calibrated, fault code cleared and Tested repair, fault code did not return but it Could if the pedal continues to "stick". looked up Parts and spoke to supervisor to have a quote Prepared for customer, ordered parts required and Cleaned up work area and tooling, released machine And let operators know what i had found and the Plan to change pedal when it comes in. Bl 2574...4/12/24 gathered parts from ups Warehouse, was onsite for another service call, When i was finished with that job i went to the Shop and was able to get machine downed for Repair, loto machine, removed hardware for pedal, Removed connectors and removed bar and pedal, Cleaned up pivots and bar ends, reassembled with Grease and installed, tied wires up and connected, Cleaned dirt from around pedals and tested Repair, worked as it should, cleaned up work area And tooling, released machine to operator and Waited for them to test, wrote report</p>

May 10, 2024	Service	30,016	Troubleshoot Fault Code	Complaint: machine in d-rate Cause: Correction: 04/13/24 tdc 1989 drove to machine Location, located machine. plugged into e.t. Inspected codes. code for low aftertreatment Concentration was present. inspected def tank, Tested quality of def. all checked out fine. would Not let me perform any troubleshooting Procedures, machine kept turning off. was getting Late, notified operator i would return next week With parts. ordered parts. packed up tools drove Home. Tdc 04/16/24 1989 drove to machine location, Located machine, inspected machine, plugged into E.t. same code (e1364 low aftertreatment #1 def Concentration) pulled up troubleshooting procedure On cat sis. checked nox sensors, checked def Fluid level. was not full added fluid to full, def Gauge level worked. checked quality of def fluid. Checked def injector and line going from nozzle To tank. blew line out and made sure there was Nothing blocking line. at this time computer shut Off, restarted computer and could not log back Into sis. had a new def pump on my truck, removed Old pump and installed new one. performed def Dosing system verification test. code e1364 still Present. still could not log back into sis, Decided to go through and check connection on def System. pulled def lines out inspected and blew Out. code e1364 would not go away. was getting Late, packed up tools, notified operators. signed Out gate. drove home.
May 10, 2024	Service	30,016	Inspect Machine	Performed inspection on machine with cat inspect App, nothing notable that needs to be addressed
May 10, 2024	Service	30,016	Daily Truck	Escanaba paper mill Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Apr 03, 2024	Service	29,853	Add Parts	Incorrect filter ordered, installed and found to Be the wrong fit.
Apr 03, 2024	Service	29,853	Daily Truck	Billerud esky Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Apr 03, 2024	Service	29,853	Daily Truck	Billerud esky Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Apr 03, 2024	Service	29,853	Add Parts	Incorrect filter ordered, installed and found to Be the wrong fit.

Complaint: customer stating that the machine has Developed another aftertreatment fault and would Like to have it diagnosed and repaired... Cause: e1364 (2) low aftertreatment #1 def Concentration... Correction: 2351...btn...3/19/24...988k, s/n Twx00768, unit # t270, 29852 hours...got some of The information, brad l. was here last week and Changed out the def filter in the pump...pulled a Def injector to bring with...traveled to the Machine's location at the billerud paper mill in Escanaba mi...checked in at the equipment shop, Mick was at a training, filled out the contractors Work form with garren...at the machine, connected To with cat et and pulled the product status Report...looked up the e1364 (2) low Aftertreatment #1 def concentration, found Recommended troubleshooting prior to def manifold Replacement on certain c9.3 through c18 tier 4 Final and stage v engines {108h} (m0157185-01). Problem; The c9.3 through c18 tier 4 final and stage v Engines are reporting diesel exhaust fluid (def) Concentration or loss of communication faults. the Communication faults are on the 528-0527, 528-0537, and 528-0550 def manifold gp. machines May derate in the field due to def system Inducements. The def quality sensor is failing due to ammonia Permeation. Solution; If a e1364 low aftertreatment #1 def Concentration. the low concentration events Causing a derate will increase operator down time. Replace def manifold if def quality is proven Good by using service test procedures. Pulled up the trouble shooting, nox conversion is Low (uenr0955-134). 5. check the diesel exhaust Fluid (def) quality, the def is not contaminated And the concentration is within the acceptable Range. 10. perform an "aftertreatment nox sensor Functional test", success... 17. perform an "aftertreatment system functional Test", success... We will need to order a def manifold and schedule The replacement due to the service magazine stated Above... There is also a service letter for replacing the Def pump that has expired... BI 2574...3/21 drove to machine location with Parts, located machine after signing in with Supervisor on site, removed covers and took psr, Removed nozzle and cleaned top of def tank, bolts To manifold were heavily corroded and took extra Time to break loose, was able to get them out with Reverse left handed drill bit, removed and capped Coolant lines, removed def lines and covered, cut Ties on wires, pulled manifold out of tank Carefully and installed new unit with new gasket And new hardware, installed coolant lines and def Lines, connected electrical connector, keyed on Machine and ran checking for leaks, all looked Good, replaced panels and fill neck, warmed up Machine and performed aftertreatment functionality Test, test took 1.5 hours, test finished and Fault codes cleared, cleaned up work area and Tooling, wrote report and released machine

Apr 03, 2024 Service 29,853 Troubleshoot Fault Code

Apr 03, 2024 Service 29,853 Inspect Machine Perform cat inspect app...

Mar 25, 2024	Service	294,491	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Mar 25, 2024	Service	294,491	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Mar 25, 2024	Service	294,491	Troubleshoot Clean Emissions Module	<p>Complaint: fault code present Cause: plugged filter Correction: bl 2574 gathered material and info from Shop and drove to machine location, spoke to tech Onsite, he had just drained and filled def tank With fresh def, located machine and keyed on, took Psr, it had codes 2348-9 datalink fault and a E1364-2 error code, low aftertreatment number 1 Def concentration, looked up error code and began Troubleshooting procedure, checked def quality and Temp and was in spec, checked def level in tank And in et, that was good, checked et to see state Of def quality sensor and it was disabled as it Should be, performed def dosing verification test And looked for leaks or kinks in lines, pump had 130 psi and -7 psi for the purge system, dosing System checked out, performed aftertreatment nox Sensor functionality test, test failed but not Because of nox sensor failure, it showed that the Scr system not able to prime, i have had this Happen on previous machines and it was def pump Filter, spoke to tech onsite and he had not Changed filter in some time, i had one on truck And removed panels and changed filter, ran nox Sensor functionality test again and the test Passed, ran a aftertreatment system functionality Test, test ran for over and hour and all worked as It should but then the test failed, soot level Was at 0% at that time, it failed due to the 2348-9 datalink fault being active, checked Software and reached out to tc, my laptop crashed And had to be restarted, this happened 3 times, tc Got back to me and informed that there was a Letter in regard to updated software part number 617-3335 and advised to follow instructions in Rehs7353 and that may resolve issue, i did not Trust my laptop to perform update, emissions error Codes were gone and machine was no longer Derated, checked all j1939 connectors and can Wires at def pump and all looked to be in good Order without corrosion, cleaned up tooling and Work area, released machine, wrote report</p>
Feb 28, 2024	Service	29,483	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614 2725...rs...1/18/24...traveled with trailer to Pick up cem and engine and bring back to the shop.

Feb 28, 2024

Service

29,483

Assemble Engine

Complaint: Cause: Correction: btn...1/22/24...locate and Install both starters... 2351...btn...1/23/24...install fuel Hoses...install rear motor mounts...install water Fittings...replace the dpf filter on the cem and Order the new doc... 2351...btn...1/24/24...replaced the ard head on The cem...cleaned up the wiring harnesses on the Cem...installed some missed brackets on the new Reman engine... 2351...btn...1/26/24...install the doc on the Cem...double check the service parts for Install...help load the engine, cem and pallet box Of parts... Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:

				<p>Complaint: customer had chosen to replace the Engine with a reman engine... Cause: customer had chosen to replace the engine With a reman engine... Correction: 2351...btn...1/15/24...2725...rs...1/15/24 had to Run tothe shop to get tooling and Information...travel To the machine at the billerud paper mill escanaba Mi...removed the right-side catwalk & Stairs...removed the alternator, it was seized up Tight...removed the a/c compressor, very difficult Place, will replace the a/c compressor and Alternator upon install...removed battery starter Cables...removed heater and other cooling Hoses...removed more panels requiring access for Engine components... 2351...btn...1/16/24... 2725...rs...1/16/24...removed the hydraulic hoses Off the fan pump, removed the tubes and hoses off The pilot and brake pump...removed the coolant Tube off the main frame...capped and plugged all Of the tubes and hoses...cleaned off the motor Mounts of dirt and iced debris...cleaned off the Top of the bell housing...cleaned the area and put Away tooling... 2725...rs...1/17/24 removed bolts around torque Converter and rear engine mount bolts. had to use Map gas to heat around bolts due to frozen Material and ice blocking the bolts... removed Clamps around front cover of the engine and draped Fire suppression lines over coolant tank. removed Front engine mount bolts. bolts were seized and Took multiple attempts with various tooling to Remove. had another technician rig and pick the Engine. guided engine out moving hydraulic lines, Coolant lines and wiring harnesses. cleaned around Frame rails and made sure all lines were capped And plugged. cleaned back side of the torque Converter off and sealed the torque converter from The elements. 2351...btn...1/23/24...remove dpf filter and Replace with the new one...return the catalyst, Wrong part...return dpf for core... 2351...btn...1/25/24...travel to the machine at Billerud escanaba...installed the new rear frame Harness for the engine and cem...removed the old One...inspected and found that the transmission Cooler hoses need to be replaced...the cooler Water elbow hoses should also be replaced...looked Up parts them on additional parts Segment...and the engine rear chassis harness was Hard and brittle, the transmission hoses were Leaking at the rearward hold down clamp... 2351...btn...1/29/24...traveled to the machine's Location...unloaded the engine, cem and the pallet Box of assembly parts...prepped the engine mounts (front & rear) for assembly...installed the new O-ring seal for the torque convertor housing and The torque convertor...the customer supplied the Crane and operator for the lift...married the Engine and torque convertor housing, installed the Forward motor mounts and installed the rear motor Mounting bolts...dropped engine in place and put All of the bell housing bolts and torqued to spec. Found in cat sis...installed the chassis wiring Harness to the engine ecm and the other Connectors...installed the brake pump hoses & Tubes...routed the fan pump hoses up to the Pump...installed the starter cables... 2351...btn...1/30/24...installed the brake</p>
Feb 28, 2024	Service	29,483	Remove & Install/replace Engine	

components and Panels...installed the engine front Firewall...installed the harness secure clips to The harness and firewall, routed the harness in Position and secured in place...installed the fuel Lines...installed the fan pump hoses and Secured...installed the a/c compressor in place And secured the lines...installed the alternator And secured the cables... installed the the drive Serpentine belt...assembled the cold start system And bracket...

2351...btn...1/31/24...installed the two starter Sense harness's and connected to the engine Harness and secured...installed the cab heater Hoses...installed the transmission cooler water Hoses and the elbow...installed the lower radiator Hoses & tubes...installed the upper radiator Hoses & tubes...installed the cross over coolant Hoses...installed the front engine Panels...installed the charged air tubes and Hoses...

2351...btn...2/1/24...installed the flow Sensor...installed the air air box...installed the Harness lay...installed the air tubes...installed The clean emissions module in place...assembled The coolant lines air lines and the fuel lines for Cem...torqued the cem mounting bolts...

2351...btn...2/2/24...got the fluids from the Shop...traveled to the machine...installed the Exhaust bellows pipe...hoisted up the two cross Bars with the coolant breather tubes and Installed...filled the engine with oil...filled The cooling system with coolant...started the Machine and let run and warm up...performed a ash Service reset...performed an ash service Regeneration... 2351...btn...2/5/24...returned parts at the Shop...at the machine, installed engine panels Back in place, except the top hood panel, side Lower engine panels and the cooler screens so Lammi fire suppression can access the engine area For suppression install...

2351...btn...2/6/24...installed the hand Rails...run checked the machine...cleaned up the Area of plugs, cut zip ties, trash...put blocking Away... 2351...btn...2/7/24...installed the remaining Panels; top hood panels, pre cleaner, exhaust Pipe, engine side panels, big door panels... Contingent damage: Complication: extreme cold conditions and snow Covering the machine-made progress slow...second Tech had to shovel and remove snow build up...a Second cold day & wind chills...removed the Hydraulic hoses off the fan pump, removed the Tubes and hoses off the pilot and brake Pump...removed the coolant tube off the main Frame...installed the air box then realized that The cem has to be installed first, removed the air Box after install... Had a coolant leak at a cross over hose above the Water pump...the engine did not start initially, The engine ecm did not communicate with the Machine at first, checked the ecm connections and The fuses, then communicated...found a coolant Leak at the top of the regulator housing on the Shunt hose clamp and tightened... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after

Feb 28, 2024	Service	29,483	Clean Machine	Complaint: snow and ice. Cause: weather Correction:(2725...r.s..1/15/2024) shoveled snow From around the machine. blew snow and chipped ice From platforms and stairs. chipped frozen sawdust From the engine compartment. 2725...r.s....1/18/24 brought truck and trailer Into shop and unloaded all the components and Cleaned snow from the components. Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: 017- disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Feb 28, 2024	Service	29,483	Troubleshoot Transmission Lines/hoses	Complaint: during run checks after installing the New engine, found that the power train (transmission pump) hose from the pump to the Transmission filter housing was leaking at a good Rate and needs to be replaced... Cause: during run checks after installing the new Engine, found that the power train (transmission Pump) hose from the pump to the transmission Filter housing was leaking at a good rate and Needs to be replaced... Correction: 2351...btn...2/6/24...988k, s/n Twx00768, unit # 270...29481 hours...found the Leak that was putting a good puddle under the Machine after performing run checks on the new Engine...looked up the part in cat sis and ordered The new hose... 2351...btn...2/7/24...checked with the warehouse, They had not made the hose yet...matt made it up Quickly...at the machine removed the existing hose And replaced the two o-rings, installed the new Hose... Complications; Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Feb 28, 2024	Service	29,483	Add Emergency Freight Charge	Freight
Feb 28, 2024	Service	29,483	Test After Repair Machine	2351...btn...2/7/24...run checked the machine After all repairs have been completed...
Feb 28, 2024	Service	29,483	Deliver Engine	Engine shuttled from site to mrq shop for engine Component swap. then new complete engine shipped To site for install.
Feb 28, 2024	Service	29,483	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614 2725...rs...1/18/24...traveled with trailer to Pick up cem and engine and bring back to the shop.

Feb 28, 2024	Service	29,483	Troubleshoot Linkage Position Sensor	<p>Complaint: the machine has had an armrest position Sensor fault for quite awhile, 1628- 3 armrest Position switch : voltage above normal Cause: the machine has had an armrest position Sensor fault for quite awhile, 1628- 3 armrest Position switch : voltage above normal Correction:2351...btn...2/6/24...988k, s/n Twx00768, unit # 270, 29483 hours...had supervisor Contact customer for the armrest fault and dash Exclamation point indicator...customer asked us to Repair the armrest fault...looked up the parts Needed, got them coming for tomorrow... 2351...btn...2/7/24...got the parts off of the Shuttle...removed the original switch off the left Armrest...had to disassemble the latch assembly To salvage the cable clip without breaking it due To the new latch not having it...found the bad Wires in the armrest switch harness...installed The cable clip...installed the new latch - switch Assembly in place, connected the harness connector And secured with a zip tie...adjusted the striker For the latch...tested operation, good... Contingent damage: Complication: had to drill out the rivets to break Down the latch to spare the plastic cable clip... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
Feb 28, 2024	Service	29,483	Test/check& Adjust Cooling Package	<p>Complaint: after the install of the new engine, Pressure checks of the cooling system, hydraulic Fan calibration and coolant flow checking in cat Et are required... Cause: after the install of the new engine, Pressure checks of the cooling system, hydraulic Fan calibration and coolant flow checking in cat Et are required... Correction: 2351...btn...2/6/24...980k, s/n Twx00768, unit # 270, 29481 hours...put the stant Pressure tester on the cooling system and Pressurized to 15 psi, held pressure for 15 Minutes...performed the 1551-13 engine demand fan System : out of calibration, cooling fan - Calibrate (uenr0955-133) as per cat sis with the Tooling from the shop... Contingent damage: Complication: could not get the photo eye to read The reflective tape correctly for quite a bit, Moved the eye numerous times and changed the tape Out a couple times to finally read the revolutions Correct... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
Feb 17, 2024	Service	294,491	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Feb 17, 2024	Service	294,491	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Jan 24, 2024	Service	29,479	Daily Truck	Billerud escanab Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Jan 24, 2024	Service	29,479	Remove, Clean & Install Cylinder Head Assembly	Complaint: customers machine has developed low Coolant pressure and high combustion gasses in the Cooling system and would like to have it Diagnosed and repaired... Cause: Correction: 2351...btn...12/5/23...980k, s/n Twx00768, unit # t270, 29xxx hours...gathered the Information and tooling needed from the Shop...traveled to the machine's location at the Billerud paper mill in Escanaba mi...removed all Of the engine doors, panels, hoods, screens, Coolers, etc... 2351...btn...12/6/23...travel to Escanaba...removed the turbo and exhaust Manifold...removed the cross tubes for the Nrs...removed the nrs valve mounting Brackets...removed the intake air elbow...removed The fuel filters and mounting brackets...set the Engine to #1 tdc...removed the cam gear and Plates...removed the fuel lines and tubes to the Head... 2351...btn...12/7/23...at the machine...removed Valve covers...removed rocker arms and unit Injectors...removed rocker box...cleaned out the Exterior bolts and surfaces of dirt and Debris...removed the head bolts and removed the Head...removed the spacer plate and cleaned the Block area of dirt and debris...cleaned out the Cylinders of fuel and coolant, cleaned of the Block and taped over...no smoking gun... Contingent damage: Complication: a lot of hoses and other components (clamps) were hardened and damaged during Disassembly...the seven head bolts around #4 & #5 Cylinders were tight, 3/4- and 1-inch guns did not Work, had to get a torque multiplier to break Loose, corrosion seizing them in... 2351...btn...1/3/24...sort and return parts to the Cylinder head job...
Jan 24, 2024	Service	29,479	Daily Truck	Billerud escanab Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 02, 2024	Service	29,473	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

Jan 02, 2024	Service	29,473	Troubleshoot Aftertreatment System	<p>Complaint: machine has emissions related alarm Sounding Cause: high inlet manifold fuel pressure and Conditions not met code activated level 1,2,3 Warning on scr system Correction: arrived to site, customer was using The machine with the alarms and flashing scr System error. additional time was needed to wait On machine to become available. once ready, Connected cat et, performed psr download. verified Codes, ran system functionality test and failed For high fuel pressure. went to customer shop and Grabbed a fuel filter, returned to machine, Changed filter. also removed hose from inlet Filter at the scr manifold and cleaned out the Screened filter. was black and appeared a little Gummed. returned to system menu, performed Functionality test and passed. performed regen, However kicked out for low coolant pressure. Checked reservoir, very low. returned to customer Shop, grabbed coolant and filled mahcine system. Coolant would pressurize and spill out the vent. Removed both ends shunt line, hose was free and Clear. connected radiator pressure testor and Failed the test after 10 minutes at 19psi. will Need to return to perform additional Troubleshooting for this secondary issue. --2208-- --29478 hours-- Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: 017- disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
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Jan 02, 2024	Service	29,473	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
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Jan 02, 2024	Service	29,473	Troubleshoot Cooling Package	<p>Complaint: low coolant pressure Cause: Correction:--2208-- performed regen, However kicked out for low coolant pressure. Checked reservoir, very low. returned to customer Shop, grabbed coolant and filled mahcine system. Coolant would pressurize and spill out the vent. Removed both ends shunt line, hose was free and Clear. connected radiator pressure testor and Failed the test after 10 minutes at 19psi. will Need to return to perform additional Troubleshooting for this secondary issue. --2208-- Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: 017- disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
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Dec 27, 2023	Service	29,452	Credit To/for Engine Coolant	
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Dec 27, 2023	Service	29,452	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
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Dec 27, 2023	Service	29,452	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
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Complaint: low coolant flow Cause: head gasket, pump changed due to weeping to Start. Correction: bl 10/31 2574..was informed that Customer had issue with leaking coolant and low Coolant pressure fault, ordered sensor, waited for It to come in on shuttle, drove to machine Location, machine was in use and operator brought To yard, plugged in et and took psr, waited for Machine to cool and located pressure sensor for Coolant on machine, while in the location i Noticed the oil filter lines for engine were Leaking heavily, ordered hoses but learned that Customer had already ordered, canceled my order And made arrangements to change hoses asap, topped Off coolant, released machine, operator took Machine and returned with same fault code, saw Small amount of coolant around water pump, looked At cooling system loop, was aware of regulators Being replaced recently and with the small leak Determined it could be losing pressure at pump Housing, ordered new pump and new seals for Cooling system, scheduled repair.... 11/3 bl 2574.....returned with parts and seals, Located machine and had it brought into shop Onsite, removed hoses and regulator housing, Removed oil filer housing and hoses, attempted to Remove water pump cover, was unable to because nrs Cooler was obstructing, removed clamps on cooler And pried it over, still did not have enough room, Had to remove cover on oil cooler, removed pump Cover, removed pump, cleaned all mating surfaces, Installed new orings, installed pump and installed Cover, installed oil cooler cover, installed all Hardware and torqued to spec, installed all Coolant lines and hoses with new orings and Clamps, moved nrs cooler back into place, Tightened clamps, handed off work in progress to Second shift on call, cleaned work area and Tooling, gave hand off notes to tech to finish and Get machine up and running for customer that Night, drove back to shop and wrote report 2351...btn...11/16/23...was asked to confirm that The coolant pressure was low...at the machine, Pulled a psr...installed a vacuum on the cooling System, removed the sos tap from the housing and Installed a pressure tap...checked all fluids on The machine and started the machine...with the Mechanical gauge in hand and cat et up with engine Pressures, at idle 8 - 9 psi on the gauge and 10 - 11 psi on et, full throttle and within seconds, Low coolant pressure shut down safe, on et top was 29 psi, reading 22 psi on et and 20 on Gauge...removed the surge tank cap and in seconds The pressure was up on the tank... 2351...btn...11/17/23...tested the cooling system For combustion gases, yes...

Dec 27, 2023

Service

29,452

Troubleshoot Engine Coolant

Dec 27, 2023

Service

29,452

Credit To/for Engine Coolant

Dec 27, 2023	Service	29,452	Troubleshoot Sensor	<p>Complaint: customer stating the machine has Developed a implement fault and would like to have It diagnosed and repaired... Cause: the lift linkage sensor has failed and Needs to be replaced... Correction: 2351...btn...11/9/23...988k, s/n Twx00768, unit # t270, 29453 hours...was at the Customers location for other repairs...connected To the machine with cat et and pulled a Psr...pulled up the faults and found the rotary Position sensor may fail on certain large wheel Loaders {5702, 5736, 5737} (m0089403-00). looked Up and checked on the ordered parts...checked the Harness for breaks or tears, none...waited for the New sensor to come...got the sensor from matt n. At the machine, removed the sensor and Linkage...swapped the arm out and removed the Existing sensor...torqued the hardware, installed The arm and installed the sensor on the Machine...the operator needed to push chips, so he Took it for a bit...got it back and connected to It with cat et and performed the lift linkage and Bucket sensor calibrations...pulled a second Psr...released the machine back to service...</p>
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Dec 27, 2023	Service	29,452	Remove& Install Engine Oil Lines	<p>Complaint: Cause: Correction:bl 2574....when installing water pump, Removed oil filter housing, removed hoses, was Unable to break loose fittings, hot cold cycles Had the extremely tight, broke top ones loose and Had to cut lower fitting off and use impact to Break loose, installed new orings and installed New hoses, tightened and topped off engine oil Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
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Nov 20, 2023	Service	29,250	Troubleshoot Fault Code	<p>Complaint: customer stating that the machine has Developed a diesel exhaust fluid fault and would Like to have it diagnosed and repaired... Cause: e931 (2) low aftertreatment #1 def pressure #1 active code and 5 occurrences in two hours... Correction: 2351...btn...10/17/23...988k, s/n Twx00768, unit # t270, 29244 hours...traveled to The machine's location at the paper mill escanaba Mi...checked in at the gate, checked in with the Equipment shop...connected to the machine with cat Et and pulled a psr...pulled the faults and logs, No associated faults just the e931...pulled up The trouble shooting in cat sis, and started down The list of procedures...checked to make sure that All of the service software was up to date, Yes...1. check the diesel exhaust fluid (def) tank Filler cap, dirty on the cap and seal, should be Replaced...2. check the diesel exhaust fluid (def) Gauge, full on the gauge and in the tank...4. Inspect the def lines for leaks, no visible leaks Or crystalizing...5. check the diesel exhaust Fluid (def) quality, the def is not Contaminated...9. replace the def pump filters, Checked to see if we had the filters...10. check The def pump, d. perform the "def dosing system Verification test" to pressurize the system, Result : the def pump maintained at least 800 kpa (116 psi) during the test...performed the Aftertreatment functions test and success and the Faults went inactive...performed a manual Regeneration and finished success...pulled a Psr...released the machine back to Service...advised the guys in the shop that if the Fault returns soon that we will change out the Filters and cap first before changing the Pump...2427...traveled to shop in marquette mi. Picked up parts and traveled to machine location In escanaba mi. hooked up cat et and performed a Psr. found e931 low aftertreatment #1 def pressure #1 code is active. removed covers to access the Def tank. cleaned the top of def manifold and Unhooked hoses to manifold. removed the def Manifold from the def tank. removed the filter Sock from manifold. it is very dirty and brown. Also the suction screen on bottom of manifold is Full of what appears to be sawdust. cleaned out The suction screen. installed new filter sock. Installed manifold into the tank. hooked up hoses. Removed the def pump filter. filter looks ok, Decided to change out the def pump due to amount Of debris in def tank. removed the dcu unit and Removed the def pump. installed new def pump and Installed the dcu. drained the def fluid from Tank. fluid was very dirty looking, flushed the Tank with clean fluid. filled tank with fresh def Fluid. installed all panels. started the machine And performed an aftertreatment system functional Test. test passed successfully and all fault codes Cleared. checked for leaks, no leaks noted. Cleaned up work area and traveled home. sent old Def pump to the store for core credit. shipped Dirty def fluid to store for disposal. this Completed the repair.</p>
Nov 20, 2023	Service	29,250	Daily Truck	Billerud Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Oct 26, 2023	Parts			
Oct 10, 2023	Service	29,215	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Oct 10, 2023	Service	29,215	Troubleshoot Transmission	Complaint: machine shutters when shifting from 3rd To 2nd. Cause: contamination in trans oil. Correction: mcn-2226-- performed psr. found no Codes related to problem with trans. received a Filter from the billerud shop. drained filter oil Into a clean bucket. changed oil filter for trans. Found contaminated oil with nonferrous metal. Took filter and oil back to shop. advised oil be Changed by our lube techs and filter changed every 6-8 hours after until particle count is reduced. ----- BI 10/2-10/3 bl drove to Machine location for sample after run time, found No filters available and returned to shop to get Filters on other techs shelf, returned next Morning early, found machine had not been ran at All, had operator run machine, got it to temp, had Low coolant alarm, topped off coolant, took trans Sample, returned to shop and sent sample to oil Lab
Oct 10, 2023	Service	29,215	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Oct 10, 2023	Service	29,215	Troubleshoot Transmission	Complaint: machine shutters when shifting from 3rd To 2nd. Cause: contamination in trans oil. Correction: mcn-2226-- performed psr. found no Codes related to problem with trans. received a Filter from the billerud shop. drained filter oil Into a clean bucket. changed oil filter for trans. Found contaminated oil with nonferrous metal. Took filter and oil back to shop. advised oil be Changed by our lube techs and filter changed every 6-8 hours after until particle count is reduced. ----- BI 10/2-10/3 bl drove to Machine location for sample after run time, found No filters available and returned to shop to get Filters on other techs shelf, returned next Morning early, found machine had not been ran at All, had operator run machine, got it to temp, had Low coolant alarm, topped off coolant, took trans Sample, returned to shop and sent sample to oil Lab
Sep 27, 2023	Service	29,141	Repair Coolant Hose/lines	Complaint: coolant leak under cabin. Cause: damaged blue coolant line. Correction: mcn-2226--drove to downed machine. Opened the hatch behind the cab and found the blue Hose leading from the cab damaged/ripped. the Hose was either stepped on or pulled to cause this Damage. cut the damaged portion of the hose and Reconnected. tested machine. no additional leaks Found. Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: 017- disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:

Sep 27, 2023	Service	29,141	Recondition Torque Converter	Complaint: repair t/c Cause: overheated from outlet relief being in Backorders and pressures not checked at start up. Correction: 9-11-23 2190- disassembled converter For inspection. pump drive gears were blue from Heat and had to be replaced. none of the parts for The t/c were reusable because of heat and damage. Assembled t/c from all new parts. torqued bolts To spec. assembled pump drive with new gears, Bearings, and seals. set bearings to spec and Torqued bolts to spec. installed pump drive onto Converter. torqued bolt to spec. installed new Modulating valves and rebuilt relief. installed And torqued bolts. cleaned work are
Sep 20, 2023	Service	29,123	Daily Truck	Mileage is additional for remove and install of Bucket. Our shop Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Sep 20, 2023	Service	29,123	Replace With Cat Reman Tc/trans Scavenge Pump	Complaint: transmission/ torque converter change Cause: transmission not shifting properly Correction: Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: fak 2625 removed pump and Replaced with re-man, 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: operational checks Completed and check good 001- complications:
Sep 20, 2023	Service	29,123	Test Transmission	2204- i got the transmission ready for testing. i Ordered filters and cleaner for the bench. i Installed lift eyes and fittings for testing. i Got it on the bench and hooked it up. i went Through the test procedure. the results are in The media tab. i disconnected it from the bench And got it back onto the shipping stand for paint. I cleaned up the test tooling and work area. i Completed the paperwork and got it to paint. Mjh 1934. snapped gages onto machine. checked all Pressures. pressures are good. did calibration on Machine. ran machine around once i was done with Calibrations. machine preformed as it should. all Temps are good

Sep 20, 2023	Service	29,123	Recondition Transmission & Transfer G	<p>Complaint: recondition transmission Cause: gear slippage Correction: 8/10/23 2307 stephen- located Transmission in front of loader. rigged to crane And brought into wash bay. plugged and capped all Open holes. cleaned as much dirt/debris from cases As possible before bringing into rebuild area for Disassembly. once in rebuild bay, i removed, Harness, input, modulating valves, fittings, and Tubes. i then placed trans/output on back of Output to remove case and gain access to hidden Bolts that hold planetary to output. with bolts Removed, i lifted planetary from output and placed On stands. relocated output to another area and Began disassembly of planetary. initially did a Visual inspection of parts to indicate a cause for The lost 2nd speed complaint. however, i did not Find any cut seals or wiped out clutches to verify Failure of transmission. cleaned and thoroughly Inspected components and found several gears to be Scored from debris passing through gear mesh Presumably from failed torque converter. also Found a few plates to have excessive wear in Reaction dowel slots as well as some discs Measuring below new spec. ordered new parts and Reassembled with new bearings, seals, thrusts, Springs, and gears, plates, and discs where Necessary. installed planetary on output that Another tech rebuilt. installed case, tubes, Modulating valves, new harness, etc. installed Input and yokes. located a suitable stand but had To remove transmission that was currently in stand And installed 988 transmission in stand. shipped To dyno for testing. cleaned area and wrote Reports. 2239 pen-i was tasked with rebuilding Of the input/output transfer gears. disassembled, Cleaned and inspected both assemblies. both gears On the input were found to have pitting on gear Faces due to this they were not acceptable for re Use and new gears were ordered to replace them. Replaced all bearings, seals and races. set gear End play and replaced speed sensor. this procedure Was followed for the output transfer gear as well All hard parts were found to be in serviceable Condition for re use. all hardware was torqued to Standard torque unless otherwise specified in the Assembly guidelines. Contingent</p>
Sep 20, 2023	Service	29,123	Transport Machine	Round trip transport
Sep 20, 2023	Service	29,123	Remove & Install/replace Torque Converter	<p>Complaint: contamination Cause: transmission failure Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 1934 mjh - installed Torque converter into engine bell housing. Installed all bolts and torqued to specification. Hooked up lines that ran from the torque converter To the transmission cooler. installed pumps onto Torque converter. torqued bolts to specification. Hooked up lines to the converter. 023-salvage/repair: 030-test after repair: 001-complications: 2625 fak see segment 20</p>

Sep 20, 2023	Service	29,123	Remove & Install/replace Transmission	Complaint: transmission failure Cause: Correction: removed and installed transmission Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 1934 mjh - installed Transmission lines. put all hard lines back on With new o-rings. installed drive shafts from the Front axle to the transmission and from the Transmission to the rear axle with new bolts and Torqued them to specification. installed the Transmission fill tube. hooked up transmission Sight glass lines. i installed hydraulic function Block back onto machine. hooked up all the hard Lines and the other lines with new o-rings. lifted Cab back onto machine. installed cab mounting Bolts and pins. torqued to stated specification. Hooked up wiring harness to the cab. hooked up a/c Lines. hooked up coolant lines. installed ground Strap to the cab. hooked up power wire to the cab. Filled machine with fluids. 023-salvage/repair: 030-test after repair: 001-complications: fak 2625 see segment 19
Sep 20, 2023	Service	29,123	Recondition Parking Brake	8/10/23 2307 stephen- disassembled park brake and Found 3 discs measured below new spec, as well as Hub to have spline wear from discs (pics in Media). ordered new hub, discs, seals, and bearing To rebuild. once parts arrived, brake was Reassembled.
Sep 20, 2023	Service	29,123	Additional Charges Transmission& Torque Con	Additional hard parts needed for transmission and Converter.
Sep 20, 2023	Service	29,123	Charge Emergency Freight Charge	Freight charges.
Sep 20, 2023	Service	29,123	Clean Machine	Complaint: clean machine as required for repair. Cause: transmission and torque converter repair Correction: Contingent damage: Complication: lots of wood/dirt built up around Components, this required extra time to ensure Cleanliness when disconnecting hydraulic hoses and Electrical connections were made. Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: fak 2625 001-complications:
Sep 20, 2023	Service	29,123	Replace Transmission Lines/hoses	Complaint: contamination Cause: transmission failure Correction: replaced all transmission lines Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 1934 mjh - replaced All transmission lines. ran all lines in the Factory position. replaced all o-rings for the Lines. 023-salvage/repair: 030-test after repair: 001-complications:

Sep 20, 2023	Service	29,123	Fill Fluids & Hydraulics	Hydraulic, coolant and transmission oil filled. 4 lbs. 134a charged. 9/8/23 fak 2625 Oil sampled and particle counts checked.
Sep 20, 2023	Service	29,123	Daily Truck	Mileage is additional for remove and install of Bucket. Our shop Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Sep 20, 2023	Service	29,123	Replace Battery Connector	Complaint: battery disconnect switch won't turn Cause: corrosion Correction: replace switch assembly New switch on order 7/27/23 010-remove / install: removed and replaced battery Disconnect switch. 8/1/23 fak
Sep 20, 2023	Service	29,123	Charge Warranty	3yr/5000hr warranty
Sep 20, 2023	Service	29,123	Recondition Torque Converter	Complaint: rebuild t/c Cause: metal debris found in converter housing. Machine came in because 2nd gear was not working In the transmission. Correction: cleaned and disassembled converter and Pump drive. found that the turbine lock clutch Had failed and wore into piston. metal debris also Went through the pump drive gears. pictures of Damage are in the media file. assembled t/c with All new bearings, seals, clutch packs, and hard Parts that were damaged from failure. torqued all Bolts to spec. assembled pump drive with new Bearings, seals, and gears. set bearing endplay to Spec. torqued bolts to spec. rebuilt relief valve And installed original shims. torqued bolts to Spec. cleaned and painted converter. cleaned work Area. Contingent damage: Complication: extra time was needed to clean and Inspect parts because of failure. some rebuild Parts had to be ordered that were not on the Original order. Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Sep 20, 2023	Service	29,123	Replace Hydraulic Hoses/lines	Installed fan covers and proximity sensor. Installed miscellaneous hoses. 2626 Imp 8/21/23 1934 mjh - replaced fan hydraulic lines, replaced All axle cooler lines, replaced hydraulic pump Suction lines. replaced hydraulic tilt cylinder Lines and lift cylinder lines. replaced hydraulic Tank lines. replaced torque converter lines. Changed all the hydraulic function block lines. Replaced all the lines for the pumps on the torque Converter.
Sep 20, 2023	Service	29,123	Excessive Labor Machine	52hrs excessive labor not charged to the customer.

Sep 20, 2023	Service	29,123	Replace With New Cable/wire	Complaint: camera not working Cause: broken camera wire Correction: replaced camera wire 017-disassemble / assemble: 1934 mjh- removed back Panel to access camera wiring. removed all the Zip ties and pulled wire through machine. ran new Wire from camera to front of machine neatly. zip Tied camera wire into place. reinstalled back Paneling. 030-test after repair: turn key on and back up Camera is coming up on dash and is working as it Should.
Sep 20, 2023	Service	29,123	Clean& Inspect Cooling Package	Complaint: clean, inspect and pressure test Cooling system Cause: transmission and converter recognition Correction: drained coolant, cleaned radiator Package thoroughly. pressure tested for 4hrs. it Held. inspection complete.
Sep 20, 2023	Service	29,123	Replace With Cat Reman Tc/trans Oil Cooler	Complaint: contamination Cause: Correction: replaced with new Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 1934 mjh - ones cooler Was installed i hooked up coolant lines and trans Cooler line, torque converter line 023-salvage/repair: 030-test after repair: 001-complications:
Sep 20, 2023	Service	29,123	Test After Repair Machine	Testing of machine / calibrations completed. Complaint: Cause: tdc 09/12/23 drove to machine location Located Machine. hooked machine up to et ran calibrations For bucket. took machine outside and tested. there Was a note on controls saying object detection Sensor needed to be calibrated. looked up Procedure in cat sis one of the requirements Stated you needed two people to perform this job. All techs were gone for the day so contacted Supervisor notified operators on site, packed up Tools drove home. Tdc 09/13/23 drove to machine location located Machine. drove machine to a well opened area to Perform object detection sensor calibration. had Other tech with me to help. went to start Procedure and realized sensor wasnt working. Contacted supervisor. was told it never did work And was not a required repair. packerd up tools Drove home. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:

Sep 20, 2023	Service	29,123	Remove& Install High Capacity Bucket	<p>Complaint: was asked to remove the chip bucket off The machine so it can be transported to the Negaunee branch for other services... Cause: was asked to remove the chip bucket off the Machine so it can be transported to the negaunee Branch for other services... Correction: 2351...btn...7/18/23...988k, s/n Twx00768, unit # t270, 29123 hours...traveled to The customers location at the billerud paper mill From another job site...prepared the machine for Service...removed the two loader arm pins and Installed two dummy pins in place of...used a Chain fall on the dog bone link and removed the Pin...installed a dummy pin there...brought the Bucket out of the shop and staged on the open Blacktop area outside the shop...removed the three Dummy pins...zip tied the shims to the Bucket...the three pins and keepers are in the Equipment shop...the machine is ready for Transport... BI 2574 7/18/23 assisted with bucket removal Contingent damage: Complication: nothing to report at this time...</p>
May 30, 2023	Service	28,669	Daily Truck	<p>Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191</p>
May 30, 2023	Service	28,669	Troubleshoot Transmission	<p>Complaint: slipping in gear Cause: internal wear and/or clutch damage Correction: mcn-2226--before testing the Transmission the filter and suction screen were Removed for inspection. found metallic oil in the Filter housing and abnormal amount of metallic Particles attached to the suction screen magnets. Advised customer to have transmission rebuilt. a Repair quote has been issued. ----- ----- Mcn-2226--customer has decided to run machine Anyway. topped off transmission oil for machine Release back to customer.</p>
May 22, 2023	Service	28,047	Replace Radiator	<p>Complaint: leaking core(s) Cause: leaking cores x2 Correction: mcn-2226--removed all necessary covers And fan to gain access to the radiator cores. Removed each one at a time. cleaned, documented And painted the lower tank. installed new seals. Installed new cores and bolted the upper holding Plates into place. installed the cross over tubes With new clamps. performed a air pressure test at 10 psi only. sprayed all possible leak areas with Soapy water. no leaks found. pumped original Coolant back into the system. performed pressure Test again at 10 psi. no leaks. finished Reassembly. used new seals for fan motor. started The engine and allowed to reach operating temp. Tested all machine functions. no leaks found. job Completed. will need to retrieve all cardboard Boxes and old cores. one core should be left over In case of parts damage. used all seals and other Parts. Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>

Apr 18, 2023	Service	28,514	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Apr 18, 2023	Service	28,514	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Apr 18, 2023	Service	28,514	Remove& Install Steering Cylinder	<p>Complaint: customer stating that the machines left Steering cylinder cap seals are leaking and would Like to have the cylinder replaced and leaks Repaired... Cause: something hit or struck the rod side Hydraulic weldment and was cracked causing the oil To leak from the cylinder barrel... Correction: 2351...btn...4/7/23...988k, s/n Twx00768, unit # 270, 28514 hours...loaded the new Cylinder in the truck...traveled to the machines Location at the billerud paper mill in escanaba Mi...got the machine from operations and prepared The machine for service over at the cytek Building...released the hydraulic system pressure According to cat sis...removed the existing Cylinder according to the steering cylinder - Remove and install (kenr6720-08)...cleaned Everything up as i transferred the plumbing (pipes) over from the original cylinder to the new Cylinder and replaced every o-ring that was Exposed or touched...installed the new cylinder in Place and assembled the machine...cleaned up the Tooling and mess...operated the machine and Steered it across the lot numerous times making Figure eights...checked the hydraulic oil and Good...released the machine back to Service...2351...btn...4/10/23...unloaded the Cylinder off the truck and the trash...put the Supplies used back on the truck...finished the Service reports... Contingent damage: Complication: nothing to report at this time... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
Mar 10, 2023	Service	28,222	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Mar 10, 2023

Service

28,222

Replace With Cat
Reman Diesel
Particulate Filter

Complaint: customer stating that the machine has Developed an aftertreatment fault and would like To have it diagnosed and repaired... Cause: dpf ash load high and needs the filter to Be replaced... Correction: 2351...btn...3/2/23...helped brad l. With the dpf filter replacement... 2574 3/3/23 bl.... drove to machine location, Finishe work on another machine, had shop foreman Bring machine to repair area, took psr, ran ash Regen, loto machine, removed panels, removed Clamps on dpf, used crane to hoist out dpf, blew Out inlet side with compressed air, installed new Unit with new clamps provided in kit, torqued all Clamps to spec, verfiied clamps were in correct Location, wrapped dpf that was removed for core Return, installed panels and doors, replaced sesor And lines with anti seize, replaced exhaust pipe, Performed ash reset in et, performed manual regen As instructed in special instructions, this took 2 Hours to complete, during regen i investigated Issue with armrest fault, found 2 wires had been Severed in harness, trimmed wires back and Replaced connector with new and new pins, verified Armrest fault was no longer present, manual regen Passed and high ash fault was no longer present, Spoke to shop foreman on site, released machie and Returned to fabick shop to return dpf core Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:

Feb 27, 2023

Service

27,210

Troubleshoot Cat
Emissions Solutions

Complaint: active events Cause: wip Correction: mcn-2226--drove to downed machine. Shows 88% def level. removed the fill spout and Confirmed proper level. def tank temp is also Below threshold for over temp. all is updated. Unable to perform any def related tests. had to Run engine to operating temp, shut down, allow to Cool below 212 degrees and then it would work. Performed def pressure test. passed. performed nox Sensor test. passed. note- fire extinguisher was Difficult to remove in order to gain access to def Tank. machine also has "no" quality sensor. Performed def accuracy test. passed. 120ml. spray Pattern is bad. ordered new def injector. also Found exhaust leak near doc to pipe clamp leak. Ordered. -----
----- Mcn-2226--drove back the next day with new parts. Removed faulty def injector. installed new Injector. found active code for 3821-6: def dosing Valve; current above normal. short circuit. began At injector plug and attempted to force opposite Code. at the 5th connector i was able to force Opposite. needed factory passwords each time to Clear code. the only connector i was able to turn Code to open circuit was at the dcu 86 pin Connector. was unable to perform overlay as i did Not have the correct socket for the 86 position Connector. ordered new harness as soon as i could. ----- Mcn-2226--recieved new harness from parts dept. Drove back to machine in escanaba,mi. removed old Harness. cleaned all connectors. installed new Harness loose. reinstalled all removed connectors From prior troubleshooting. checked fluid levels And started the aftertreatment system function Test. after 1.5 hours the test passed and all Aftertreatment codes have cleared. ziptied new Harness to petu and secured all other wires that Were inspected during troubleshooting. reinstalled All panels and tested the machine. all is well. -----
----- Mcn-2226--1/13/23--friday the 13th. recieved call That machine is down again for the same faults. Drove straight from another customers job to Billerud. performed psr. found same codes. tested Def fluid again. good at 34%. performed a nox Sensor test. passed. drove to heq building and Looked for billerud's instock nox sensors. sensors Have been moved. i looked everywhere. made some Phone calls for assistance to locate sensors. mick From billerud came back to work to help find them While i finished the troubleshoot, he informed Me that he was unable to find them and to remove The sensors out of the downed machine from #570. Same sensors but off of a c13 engine. i was able To remove the tailpipe out grey sensor when mick Found the new sensors and gave them to me. i drove Back to #270 and installed both. attempted to Perform a ssysem function test. failed due to Failed to ignite code. inspected where i was Installing the sensors to see if i disturbed Something. nothing obvious. began to troubleshoot New code. spark was good at coil wire. primary. Removed spark plug and noticed that soot has built Up at tip indicating lack of spark or lack of Spark ground or touch-off point. found excessive Soot built up in ard head. performed air and motor

				drill with a small wire Brush to cleab the internal area of the spark plug And blew compressed air through. cleaned spark Plug and reinstalled. performed system function Test again. passed. all operator inducement codes Are cleared. reinstalled all panels and zip tied All new nox sensor wires firmly in place. tested Machine again and left running. operators will Test through the night. advised to shut off Machine between chip pile pushes. cleaned up and Drove home. long day. Performed a after treatment system function test. Failed due to
Feb 24, 2023	Service	28,030	Daily Truck	Escanaba mill Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Feb 24, 2023	Service	28,030	Troubleshoot Ride Control System	Complaint: ride control nonoperative. Cause: failed 373-9461 accumulators Correction: mcn-2226--drove to machine location. Installed hose and guage to front accumulator. Slowly screwed valve inward and found pressure to Be over 1500 psi. pressure should only be 551 psi. Made sure that bucket was flat on the ground and Pilot accumulator pressure was zero. pressure was Still over 551 psi. as i was removing the valve From the accumulator i noticed a lot of oil on the Gas side. ordered both accumulators. ----- ----- Mcn-2226--once the accumulators arrived i charged Them to 551 psi. drove to billerud paper mill and Locked the machine out. removed the oil and gas Mixture from the accumulators. between the 2 Accumulators i was able to drain nearly 2.5 Gallons of oil from the gas side. installed Accumulators and marked them with gas psi and date Installed. operators needed machine back. Released machine after checking for leaks. none Found. Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove / install: 017- disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Feb 24, 2023	Service	28,030	Daily Truck	Escanaba mill Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Feb 15, 2023	Service	0	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

Feb 15, 2023	Service	0	Replace Coolant Hose/lines	Complaint:customer called and wanted us to come Replace bloken line, did not know which line so we Ordered and brought what was in stock for that Machine Cause: Correction:drove to machie location, spoke to Foreman who said he had already repaired machine, Ws na cut heater hose line that he trimmed back And replaced, he had another machine he wanted us To troubleshoot parkingbrake so we worked on that And ordered parts for park brake pads and Hydraulic leak Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 30, 2023	Service	27,686	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 30, 2023	Service	27,686	Troubleshoot Cat Emissions Solutions	Complaint: operator inducement level 3 Cause: def injector and nox sensors failed. Correction: mcn-2226--performed the following. no Pump leaks or line leaks. 35% def concentration. Performed a-t system function test. associated Code for low def concentration. et shows 88% def Level. removed panel from tank and confirmed. all Software updated. unable to perform any def test. Had to run engine, shut down and start tests. this Happened for any def test needed to be performed. Nox test passed several times. performed def Accuracy test. 120ml good. spray patter bad. Ordered new def injector. attempted to perform System function test. all tests passed. released Machine back to customer. ----- ----- Mcn-2226--found active code for open circuit to Def injector. used factory password to clear. Clears for a second then reappears. troubleshot Harness from injctor to dcu harness. i did not Have the correct pins to run a bypass harness to Injector. ordered new harness. ----- ----- Mcn-2226--recieved new harness and drove back to Downed machine. installed new harness. performed System function test. code is now cleared. Released machine back to customer after installing All panels and guards. ----- Mcn-2226--drove back to machine due to same error Code for def concentration low. installed Customers nox sensors that they had in stock. new Sensors are ordered to replenish thier stock. Installed new sensors. ran system fuction test. All codes cleared. released machine back to Customer. ----- ----- Mcn-2226--1-16-23--wrote all reports and time. Restocked consumeables on service truck. ----- ----- Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:

Jan 30, 2023	Service	27,686	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Dec 13, 2022	Service	27,210	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Sep 19, 2022	Service	26,232	Troubleshoot Aftertreatment System	<p>Complaint: customer stating that the machine has Developed an aftertreatment fault and would like To have it diagnosed and repaired... Cause: e1364 (2) low aftertreatment #1 def Concentration... Correction: 2351...btn...7/16/22...988k, s/n Twx00768, unit # t270, 26153 hours...got ready for The service call out (weekend on call). traveled To the machines location at the escanaba verso Paper mill...connected to the machine with cat et And pulled a psr...e1364 (2) low aftertreatment #1 Def concentration...pulled up the trouble Shooting for the fault, nox conversion is low (m0091957-02). checked all of the service software Flash files and all are up to date...performed an Aftertreatment functions test, successful...the Active faults went inactive...checked the def Quality sensor installation in configurations as Per the trouble shooting, not installed...cleared All of the logs and faults, could not clear the E1364 concentration inactive log or the e1389 Operator inducement even with factory pass Words...performed a regeneration functions test, Success...pulled a second psr...notified the Operator its back in service...released machine Back to service...2427....7/31/22...machine is Down for same fault code for the 3rd time in 2 Weeks. travel to machine location in escanaba mi From calumet mi. hooked up cat et and perform a Psr. followed t/s procedure. checked def tank Level & temp, pulled sample of def and tested Quality. 32.5 percent, ok. def sensor installation Status not installed, inspected all def lines for Leaks, no leaks found. performed aftertreatment Nox sensor functional test, passed ok. removed def Injector from exhaust. performed a def dosing System accuracy test. performed test 2 times. had 110 ml both times. this is within spec. checked For exhaust leaks. slight exhaust manifold leaks Found, however before nox in sensor so should not Affect readings, fuel quality ok, performed Aftertreatment system functional test. failed Test. e1364 remains active. per troubleshooting Swapped out the nox sensors. performed Aftertreatment system functional test 1 more time. Code cleared, all ok. cleaned work area and Traveled home. failing part serial #a2c16102800-04 Contingent damage: Parts warranty. Original purchase details (please complete all) Original purchase order number:mq06409 Original purchase order date:sept.08,2021 Smu at time of original purchase:22817 . (please attach copy of original purchase document To the media tab)</p>
Sep 19, 2022	Service	26,232	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

Sep 19, 2022	Service	26,232	Troubleshoot Aftertreatment System	<p>Complaint: customer stating that the machine has Developed an aftertreatment fault and would like To have it diagnosed and repaired... Cause: e1364 (2) low aftertreatment #1 def Concentration... Correction: 2351...btn...7/16/22...988k, s/n Twx00768, unit # t270, 26153 hours...got ready for The service call out (weekend on call). traveled To the machines location at the escanaba verso Paper mill...connected to the machine with cat et And pulled a psr...e1364 (2) low aftertreatment #1 Def concentration...pulled up the trouble Shooting for the fault, nox conversion is low (m0091957-02). checked all of the service software Flash files and all are up to date...performed an Aftertreatment functions test, successful...the Active faults went inactive...checked the def Quality sensor installation in configurations as Per the trouble shooting, not installed...cleared All of the logs and faults, could not clear the E1364 concentration inactive log or the e1389 Operator inducement even with factory pass Words...performed a regeneration functions test, Success...pulled a second psr...notified the Operator its back in service...released machine Back to service...2427....7/31/22...machine is Down for same fault code for the 3rd time in 2 Weeks. travel to machine location in escanaba mi From calumet mi. hooked up cat et and perform a Psr. followed t/s procedure. checked def tank Level & temp, pulled sample of def and tested Quality. 32.5 percent, ok. def sensor installation Status not installed, inspected all def lines for Leaks, no leaks found. performed aftertreatment Nox sensor functional test, passed ok. removed def Injector from exhaust. performed a def dosing System accuracy test. performed test 2 times. had 110 ml both times. this is within spec. checked For exhaust leaks. slight exhaust manifold leaks Found, however before nox in sensor so should not Affect readings, fuel quality ok, performed Aftertreatment system functional test. failed Test. e1364 remains active. per troubleshooting Swapped out the nox sensors. performed Aftertreatment system functional test 1 more time. Code cleared, all ok. cleaned work area and Traveled home. failing part serial #a2c16102800-04 Contingent damage: Parts warranty. Original purchase details (please complete all) Original purchase order number:mq06409 Original purchase order date:sept.08,2021 Smu at time of original purchase:22817 . (please attach copy of original purchase document To the media tab)</p>
Sep 19, 2022	Service	26,232	Daily Truck	<p>Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614</p>

Sep 19, 2022

Service

26,232

Troubleshoot Engine

Complaint: customer stating that the machine will Intermittently shut down while traveling and would Like to have it diagnosed and repaired... Cause: Correction: 2351...btn...5/27/22...988k, s/n Twx00768, unit # t270, 25723 hours...talked to the Customers equipment shop and got that the machine Will intermittently shut down for no reason while In motion (roading). at the machine, connected to The machine with cat et and pulled a Psr...checked the logs and faults...nothing Related to the machines running operations...the Only applicable fault is object detection system 2348- 9 sae j1939 data link #2 : abnormal update Rate and is occurring 33 time within this time Framing...looked up the new software is now Available for all cat object detection and vision Applications on certain cat products {7610, 7620} (m0067034-03), improved 2348-09 diagnostic Handling for 988k models...may or may not be the Source but a start...follow the following service Information 2018/12/03 procedure for installing Object detection software on monitor display group {7347, 7490, 7620} (rehs7353-03) for uninstalling And installing the updated software via ethernet Connections...need the correct cables and Tooling...unpdated the implement, transmission and The dep control...ordered a ground level shut down Switch and a starter lock out switch... Complaint:machine shutting down and setting Parking brake Cause:electrical short Correction:drove to machine location, spoke with Foreman and let him know i was on site, hooked up Computer and viewed cat et, no codes present that Would assist in troubleshooting, this has been a Reccuring issue, previously i checked all Connections and tightened them, replaced junction Block and cleaned all wires, cleaned battery box And connections, they all checked out and were in Good condition, called forman and asked for an Opertor to come out to machine and dicuss the Sequence of events, they stated it only happens During or after heavy rain, it previously tripped The 150 amp main breaker whemn it first occured And they found loose wires, stated verso tech Tightened the wires and may have broke the breaker Internally because the stud would spin, his Information was very helpful, he also stated that The machine would completely shut down as if the Key had been turned, all lights and screens turned Off, i checked the breaker and found it was hot To the touch and the stud spun, located part Number and found it in stock, spoke with a senior Tech with fabick and he stated he had seen the Main relay associated to the junction block and 150 amp breaker fail intermitently and cause the Same failure and complete shut down with no codes Visible, he also suggested replacing the ground Level shutdown switch located on machine, it is a Simple toggle and can fail in harsh envirments. Located part numbers and location in sis schematic And machine location, spoke with verso foreman And discussed The part costs and our findings, he made a call And verified that we could replace all parts Associated to the issue BI 5/29 traveled to shop and aquired needed parts, Drove to verso escanaba and stopped in office

repair machine, Loto machine, removed box with ground level shut Off, removed switch and replaced, inside of box Was loaded with bark debris that was saturated, This is causing heavy corrosion to all parts in That area, the other switches should be replaced Soon, one has already been replaced, tested repair And it worked properly, moved to the 150 amp main Breaker, upon further inspection during removal It was badly damaged, i was unable to remove nuts And had to cut the studs, wire wheeled the Terminals and installed breaker, during repair i Found the area was loaded with bark debris and Moisture, i removed as much as i could and found Some wire terminals in the area that had been Covered for a long time, moved on to the main Relay located in the cab behind the fuse panel, Located relay and found that the area can be Exposed to the elements, also had bark dust and Moisture, i replaced the main relay but only had The one in stock, the second is on order and will Need to be installed at a later time, i have Attached photos of the relay area with the new one Installed, photos of the ground level shutdown Switch and the condition of the box it is in, i Spoke to the operators about the areas packed with Bark and moisture, i suggested using compressed Air and a vacuum to clean the areas regularly, they Said they would add that to there monthly Cleaning routine Contingent damage: Complication:had to remove huge amount of bark Debris, had to cut ground level shutdown switch to Remove it, had to cut the studs off of the main Breaker to remove it, only had one of two relays Available for install Labor code breakdown 035-DIAGNOSIS/TROUBLESHOOTING: 010-REMOVE / INSTALL: 017-DISASSEMBLE / ASSEMBLE: 023-SALVAGE/REPAIR: 030-TEST AFTER REPAIR: 001-COMPLICATIONS:

Jul 22, 2022

Parts

Jul 06, 2022	Service	25,660	Troubleshoot Starting System	<p>Complaint:machine shutting down Cause:potential bad or loose connection or ground Connection:drove to machine location, talked with Operator and he stated it was shutting down Randomly without warning, no codes present, took Product status report, operator stated the issue Occurs when it rains heavily, called andy doyen Who had looked into issue previously and he Suggested checking main terminals and grounds, Lo/to machine, opened battery box, found harness Pinched going to main shut off, rerouted wire but Saw no damage, checked all battery terminals and Found several that needed tightening, the 2 main Terminals were very loose, inspected junction block Under machine and found the terminals Packed with wet bark dust, 2 terminals were Corroded badly, the third was very loose, cleaned And wire brushed terminals, tightened the loose One, the eyelet covers were torn and i used zip Ties to secure them in place, recomend replacing The junction block and the eyelet covers and Cleaning the eyes when junction block is Replaced, contacted supervisor on site and let Them know i believe i had located the root cause And would return to replace junction block when Parts arrived, unlocked tag out device Bl 5/19/22 was on site repairing steer cylinder, Loto machine, had junction block parts, removed Old unit, cleaned all hardware, wire wheels Connections, installed new protective covers, used Anti seize on all hardware, unlocked loto device, Put machine back into service Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
Jul 06, 2022	Service	25,660	Daily Truck	<p>Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614</p>

Jul 06, 2022	Service	25,660	Troubleshoot Fault Code	Complaint:customer states that the machine needs a Service tool regen after replacing the ard head Temp sensor. Cause:2369-apd-ard nozzel is plugged Correction:2369-travel to the customers location. Located the machine after speaking to the Customers reps. they stated that they have Replaced the ard head temp sensor due to the Machine having a code for conditions not met for Regen. connected et and checked the codes. looked Up in et and followed the directions to Trobleshoot. initial troubleshooting shows that The nozzel heater is not working. looked up and Ordered the part and will return tomorrow to Replace..... Returned with the nozzel heater and installed. Attempted to run the regen and it failed. the Machine now has a code of e1025(1) failure to Ignite. looked up the troubleshooting for the code And followed the instructions. nozzel heater now Has 5.7 amps. heater relay has 9.7 vdc. preformed Air service test and it passed. checked for spark And the spark is good. the flame dector is new as The customer has just replaced. checked the plug And the plug is good and the bore is clean. Cleared the codes and preformed ard ignition test. Failed. removed the ard head and checked the swirl Plate. the plated is clean. retested and it Failed again. ordered a new ard head..... Returned with new ard head and installed. cleared The codes and ran the manual regen with no Issues. released the machine to service..... Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jun 27, 2022	Service	25,922	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Jun 27, 2022	Service	25,922	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

Jun 27, 2022	Service	25,922	Test/check& Adjust Ride Control System	<p>Complaint: while at the machine for other repairs, Customer stating that the ride control system is Not working and would like to have it diagnosed And repaired... Cause: found that both of the two ride control Accumulators were over charged to 1400 psi and Showed a lot of oil in the charge blatters, signs Of possible accumulators starting to go bad... Correction: 2351...btn...6/20/22...988k, s/n Twx00768, unit # 270, 25922 hours...got the Machine back to the equipment shop...customer had A cat accumulator service kit...prepared the Machine for service...removed the protective cover Bolts on each and removed the schrader valve Covers...set up the nitrogen bottle...set up the Charge kit...checked for charge on both Accumulators and each state 1400 psi...cracked the Needle valve with out the service hose hooked up And oil discharging from both Accumulators...performed accumulator discharging And charging procedures {0738, 4263, 4264, 4331, 5077, 5077, 5081, 7474} (rehs5464-19). drained the Oil and charge from each accumulator...charged Each accumulator to spec found in ride control Accumulator - test and charge (kenr6488-13). due To the temperature (ambiant) 90 degrees, charge Each to 585 lbs... due to the size of the chip Bucket, adjusted both accumulators to 700 psi Found in ride control accumulator - test and Charge (kenr6488-13). both accumulators heald the 700 psi for quite awhile, no loss of Pressure...removed tooling and took the machine For a roading test...empty bucket the loader arms Were floating as they should...grabbed a bucket of Wood chips and performed the same roading test in The wood yard running over rough terrain and the Loader arms floating and the ride control working As it should...if the ride control issues return And we can get a gauge set on the system and the Pressures are back up to 1400 psi and oil present In the accumulators, the accumulators will need to Be replaced...released the machine back to Service... Contingent damage: Complication: nothing to report at this time... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:</p>
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Jun 27, 2022	Service	25,922	Troubleshoot Air Conditioner	<p>Complaint: customer stating that the a/c is not Working and would like to have it diagnosed and Repaired... Cause: the air conditioner condenser has developed A hole causing the leak... Correction: 2351...btn...5/24/22...988k, s/n Twx00768, unit # t270, 25702 hours...got the Machine from the production...checked the a/c System for a charge, none...set up the nitrogen Set to test and find the leak...seen the gauge set For the charged nitrogen slowly drop when the Supply was shut off...charged system again to 200 Psi and investigated the source of the Leak...removed the left cooling screen door and Found the panel for the belt and tensioner leaning On the condensor...moved the panel and found the Condensor leaking from the panel rubbing on the Condensor for who knows how long...pics</p> <p>Attatched...2351...btn...6/20/22...gathered the Parts from the shelves...traveled to the machines Location at the verso paper mill, escanaba Mi...prepared the machine for service at the Cytek building...opened both the right and the Left cooling sreen doors and secured open...a/c System is already empty...removed the inlet and Outlet hoses on the condenser...removed the Mounting bolts and removed the left hand bracket In order to remove the condenser from the location Exhibited by hydraulic hoses...transferred mounting Hardware and the right bracket...installed the New condenser...cleaned both hoses, added pag oil (dyed) to the hoses...installed new Seals...torqued all hardware...replaced the Receiver dryer due to the system open for who Knows how long...evacuated the system for 30 Minutes and down to 29 inches of murcury...let set An the vacuum did not drop...charged the system To spec, 4 pounds of r134a refrigerant...checked All fluids, checked and cleaned out the interior And exterior filters, started the machine...turned On the a/c system...good pressures at the gauge Set, good cold temperatures in the cab at the Vents...released machine back to service... Contingent damage: Complication: nothing to report at this time Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after</p>
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Jun 16, 2022	Service	25,660	Repair Steering Cylinder	<p>1873- i brought the cylinder into the wash bay and Started taking off the hoses. (saw crack on weld Around the import for hydraulic hose>) i washed Out the barrel and the grease from the bore. I broke loose the head and pulled barrel, Inspected barrel for unusal wear or debre. I set up to pull rod nut off and as i was Threading it off, i noticed it was harder to Threat. so i got the nut about half way off and Inspected the threads to see if it had been cross Threaded previously. Rod had a crack from where the piston sits to the End of the threads causing the nut to not threat Out. I got nut off and looked closer to see if rod was Repairable but it was not. I cleaned everthing up and marked where it was Craked in both spots, put rod back into barrel.</p>
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Jun 16, 2022	Service	25,660	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
				Complaint:hydraulic leak, unknown source Cause:cracked weld on cylinder port Correction:drove to machine location, talked with Operator, was shown the leak area, took product Staus report, loto machine, assumed it was Possibly oring on right steer cylinder beacasue of The direction of fluid spraying, cleaned area to Avoid contamination, removed flande fitting, Replaced oring, unlocked machine and tested Repair, leak persisted, suspected bad u-seal in Cylinder, taled to site foreman and got approval To remove cylinder at location, loto machine, Cleaned area removed grease lines, removed hoses And capped and plugged, rigged cylinder to crane, Removed pins removed cylinder, cleaned cylinder And dicovered hairline crack at weld, located and Ordered parts, wrapped rod to avoid damage, loaded In service truck to transport to fabick for Repairs, had foreman loto machine with hasp and Site lock to avoid use of machine and easy loto For person returning to install cylinder after Repair. Bl 5/19/22 drove to iron mountain and picked up Cylindder, drove to verso escanaba, located Machine, loto machine, installed seals, picked Cylinder, expanded and set in place, installed Pins, and grease lines, installed hard lines with News seals and orings, installed hoses, clean Ctliner and painted, tightened all hardware, Unlcoked loto, started machine and tested for Leaks, no leaks located, put machine back into Service Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove / install: 017-disassemble / assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jun 16, 2022	Service	25,660	Troubleshoot Hydraulic Hoses/lines	
Jun 16, 2022	Service	25,660	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
				1873- i brought the cylinder into the wash bay and Started taking off the hoses. (saw crack on weld Around the import for hydraulic hose>) i washed Out the barrel and the grease from the bore. I broke loose the head and pulled barrel, Inspected barrel for unusal wear or debre. I set up to pull rod nut off and as i was Threading it off, i noticed it was harder to Threat. so i got the nut about half way off and Inspected the threads to see if it had been cross Threaded previously. Rod had a crack from where the piston sits to the End of the threads causing the nut to not threat Out. I got nut off and looked closer to see if rod was Repairable but it was not. I cleaned everthing up and marked where it was Craked in both spots, put rod back into barrel.
Jun 16, 2022	Service	25,660	Repair Steering Cylinder	
May 02, 2022	Parts			
Apr 25, 2022	Parts			

Apr 19, 2022	Parts			
Apr 15, 2022	Parts			
Apr 13, 2022	Parts			
Apr 12, 2022	Parts			
Apr 12, 2022	Parts			
Apr 12, 2022	Service	25,457	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Jan 29, 2022	Service	24,682	Daily Truck	Verso Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 29, 2022	Service	24,682	Daily Truck	Verso Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 29, 2022	Service	24,682	Troubleshoot Hydraulic Hoses/lines	Complaint: customer stated there is a trans Mission leak that we need to determine if the cab Needs to be removed to repair or not. Cause: Correction: 2351...btn...1/26/22...988k, s/n Twx00768, unit # t-270, 24682 hours...got the Information for the three pieces of machines to Inspect...traveled to the machines location at the Verso paper mill in escanaba mi...checked in with Mick in the equipment shop...they went to get the Machine and put it in the shop...they pointed out The location of the leak...difficult to get in And visually see what hose or fitting area is the Origin...clean area of fresh oil leaking but Everything around it is dirt and debris collected And difficult to identify fitting, flanges, bolts Etc...the only way to safely reach the point is to Pull the cab or find a very small person to Squeeze in there...not a very good time of the Year to pull a cab off to r&r a hose / tube or Seals...the customers mechanic mick called over The 904 loader with the loader frame damage so i Could inspect...waited an hour and the machine Never showed up... Customer deciding when they want to remove cab to Make repair. LABOR CODE BREAKDOWN: 035-DIAGNOSIS/TROUBLESHOOTING: 010-REMOVE & INSTALL: 017-DISASSEMBLE & ASSEMBLE: 023-SALVAGE/REPAIR: 030-TEST AFTER REPAIR: 001-COMPLICATIONS:
Jan 26, 2022	Service	24,560	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 26, 2022	Service	24,560	Daily Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Jan 26, 2022	Service	24,560	Troubleshoot Fault Code	Complaint:2387 active code for def system Cause:2387 def concentration low code Correction:2387 hook up computer. found active Event code for def concentration low, also Operator inducement codes. reset codes. perform Nox sensor test. test passed. test def, it is ok. Check for latest software, software is current. Operate machine, found no issues at this time. Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 20, 2022	Service	24,190	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Jan 20, 2022	Service	24,190	Troubleshoot Battery Cable	Complaint:2369-customer asked me to look at the Battery box ar one of the batteries has shorted Against the frame. Cause:2369-the battery hold downs have corroded Off allowing the batteries to slide to and aft and Have shorted directly against the frame causing One of the positive terminals to melt completly Off. Correction:2369-looked up all parts in sis and Ordered. traveled to the site and located the Machine. the outside temps are below zero. i put Up a make shift tarp system and using a forced air Heater used the tarps to warm up the frozen Material holding the batteries into the box as Well as to keep me some what warm as well. it took 2.5 hours to get enough heat to get all 4 of the Batteries out of the box and clean up the inside Of the box. there was a massive amount of debris To clean out. installed 2 batteries and then the Other 2. only had one hold down. so will just get The machine to a point where they can use it Safely and will have to return to make final Repairs. removed the old positive cable and Installed new cable to the circuit breaker and Junction block. i noted that they were in bad Condition with corrosion that had not been Previously noted. will order both for when i Return. made the connections to each and to the Batteries. installed the new negitive cable to its Respective spots and then to the batteries. used Some wood blocking in order to keep the batteries Securely in place until i return with the Batteriy hold downs..... Returned today and installed the 2 battery hold Downs and forms, the new circuit breaker and new Junction block. test ran machine after Installation. machine run fine and is charging Normally. released the machine to the customer. Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 20, 2022	Service	24,190	Daily Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

Dec 15, 2021	Service	24,016	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Dec 15, 2021	Service	24,016	Troubleshoot Fault Code	Complaint: multiple error codes for both high and Low fuel pressure. Cause: probable: fuel pressure sensor faulty Readings. Correction: mcn-2226--drove to machine location. Performed psr download. found 17 occurrences of a E096-2 high fuel pressure error and 11 occurrences Of a e198-2 low fuel presure sensor error. fuel Pressure readings thru et show bouncing between 3 Psi to 60 psi. sensor is faulty. parts are saved To job for ordering. job is not officially opened Yet. 2369-apd-12/9/21-- travel to verso escanaba And locate machine. download psr. replaced the Fuel pressure sensor and install new sensor. Connect et and check fuel pressure. fuel pressure Is stable at this time. clear the codes and Download another psr. release machine. Contingent damage: Complication: Labor code breakdown: 035- diagnosis/troubleshooting: 010-remove & install: 017- disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Dec 15, 2021	Service	24,016	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Dec 10, 2021	Service	23,543	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Dec 10, 2021	Service	23,543	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Dec 10, 2021	Service	23,543	Troubleshoot Engine Coolant	-2330- customer recived engine oil sample report Back for elevated potasium and sodium which could Mean that coolant is being burnt or a small Internal leak the also preformed a service and Found it to be 6 gallons low on coolant i Inspected radiator cap and found it to be bad i Replaced cap customer provided parts i also found A small leak from hose that connects to egr cooler Tightend hose clamp and leak stoppped i removed Air piping from engine and egr cooler no signs of Internal leak but i did find that the intake side Of turbo showed signs of oil leaking i informed Customer and they are going to order and install Turbo themselves the bad oil samples have been Ongoing for 2000hrs machine was at our shop and The egr cooler was replaced i recomended to Customer that we wait to get oil sample results Back from there last service to see if there was just residual left in system after egr replacment I also took sample of oil that was in engine and Will send that in to see if there is a change also Took a coolant sample to see if there is Contaminets in coolant need to revist once results Come back Engine oil sample came back good, no issues Monitor normal. Inhibitor level is too low to provide Corrosion/erosion protection. recommend adding 2 Bottles of elc extender (cat p/n 119-5152) to Boost inhibitor. sample again at half the regular Interval to monitor inhibitor levels.

Sep 08, 2021	Service	22,817	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Sep 08, 2021	Service	22,817	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Sep 08, 2021	Service	22,817	Troubleshoot Fault Code	-2330- customer said they were codes and active Alarm connected et found event code 1364 low def Concentration did not have def kit first day could Only preform part of troubleshooting inspected For exhaust leaks none found inspected for def Leaks none found preformed nox sensor test and Passed preformed aftertreatment system functional Test and passed preformed test twice failed both Attempts attempted to clear code and would come Right back most likley failure is nox sensors but Returned following day with test kit preformed def Injector test and passed nox sensors are out of Country there is an updated sensors that need some Extra hardware to install the parts list is saved To work order will need to talk with customer to See how they would like to order them Service mag # m0116049 new nox sensors. 2369-apd-travel to customers location. removed the Old nox sensors and installed new ones ordered by Previous tech. ran after treatment function test. Passed. ran nox system test, passed. released Machine.
Aug 24, 2021	Service	0	Rotate Rim& Tire	Complaint: rotate tires front to rear Cause: customer request Correction: rotated tires front to rear
Jun 30, 2021	Service	22,545	Recondition Transmission	6/28/21 2307 stephen- transmission was sent back From dyno stating low lube pressure. i removed From stand and disassembled trans while inspecting Seal rings. found (1) 3p-3321 seal ring to be Broken on the 112-7308 planetary carrier. as well As minor debris on surrounding area. finished Disassembling trans and thoroughly cleaned all Components, discs, and plates while inspecting for Contingent damage. upon attempting to install new Seal ring, i found ring groove to be tight in one Spot not allowing ring to fully seat. made Additional clearance by sanding groove with 320 Until ring could fully seat and move freely within Groove. completed assembly, torqued bolts, and Tested clutches with air. installed case and Input. trans was then brought to wash bay and Painted.
Jun 30, 2021	Service	22,545	Excessive Labor Machine	
Jun 30, 2021	Service	22,545	Excessive Labor Machine	

Jun 30, 2021	Service	22,545	Recondition After Failure Transmission	<p>2239 pete nepoth-cleaned transmission planetary Case and resealed, tubes, tc relieve valve and Fittings then covered untill installed. rebuild Lube relieve with new springs and re sealed then Installed onto trans case. transfered clips from Old wiring harness to the new. cleaned and Installed new orings on modulating valve tubes. 6/4/21 2307 stephen- after removing trans from Machine, brought to wash bay and cleaned Dirt/grease from exterior before bringing in Rebuild area. once in rebuild area, i began Removing tubes, harness, and input drive. placed Trans/output on back its back per sis web. valves, Tubes, harness, and case were removed in order to Gain access to 2 hidden bolts holding planetary To output. once removed, planetary was separated From output and placed on stands. i then started Disassembling planetary. upon removal of clutch 5 Piston housing i noticed part of piston seal Protruding through manifold. disassembly of clutch 5 confirmed that discs were wiped out causing Piston to over stroke and cut piston seal. Finished disassembly, cleaned and inspected all Components. all hard parts in good reusable Condition. measured discs and found most discs to Measure below new spec as well as having Contingent damage from material and debris most Likely from clutch 5 failure. reassembled Planetary using new seals, bearings, thrusts, Discs, and springs. applied air to clutches to Ensure operation. i then disassembled input drive. Cleaned and inspected components. reassembled With new bearings, cups, and seals. performed end Play procedure and shimmed to spec per sis web. Output was then placed on stands and disassembled. Cleaned, inspected, and reassembled with new Cups, bearings, and seals. performed end play Procedure and shimmed top gear to spec. once Assembled, planetary, case, input, tubes, new Valves, and harness installed. placed in stand and Shipped to dyno. cleaned area and returned parts.</p>
Jun 30, 2021	Service	22,545	Recondition Transmission	<p>6/28/21 2307 stephen- transmission was sent back From dyno stating low lube pressure. i removed From stand and disassembled trans while inspecting Seal rings. found (1) 3p-3321 seal ring to be Broken on the 112-7308 planetary carrier. as well As minor debris on surrounding area. finished Disassembling trans and thoroughly cleaned all Components, discs, and plates while inspecting for Contingent damage. upon attempting to install new Seal ring, i found ring groove to be tight in one Spot not allowing ring to fully seat. made Additional clearance by sanding groove with 320 Until ring could fully seat and move freely within Groove. completed assembly, torqued bolts, and Tested clutches with air. installed case and Input. trans was then brought to wash bay and Painted.</p>
Jun 30, 2021	Service	22,545	Transport Machine	

Jun 30, 2021	Service	22,545	Troubleshoot Transmission	Complaint: no second gear Cause: wiped out clutch pack Correction: troubleshoot the transmission for the Loss of 2nd gear. verified complaint and downed Machine for repair
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Jun 30, 2021	Service	22,545	Test Transmission	030-test after repair: 2195 removed trans from Shipping stand. put on test bench and hooked up as Specified in bench test procedures. tested Solenoids. ran trans through all gears to purge Air. trans pressures were all fine with exception Of lube pressre. with the trans at high idle and Pump flow set to 52 gpm and lube flow regulated to 29 gpm the lube pressre was only 2 psi. clutch Pressures were good. trans shifted fine and had no Other problems besides very low lube pressre. was Instructed to ship trans back to mrq.
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Jun 30, 2021

Service

22,545

Remove& Install
Transmission

Complaint: remove and install transmission Cause: rebuild needed Correction: 6/30/21 2307 stephen- machine was Downed and locked out by another tech prior to Start of transmission removal. disabled fire Suppression and disconnected harness, hoses, and Tanks. removed brake valve and disconnected Steering hoses. another tech disconnected ecm Harnesses, power and ground cables. removed safety Pins and cab mount bolts. discharged ac and Removed coolant hoses. rigged cab and removed. Disconnected and removed many hoses and tubes. Steering valve and plate also had to be removed. Drained hydraulic oil from tank and saved in clean Suitable container. removed implement and charge Pumps. disconnected front, rear, and upper drive Shafts. removed upper and lower trans mounting Bolts. mount plates also had to be removed to have Enough clearance for removal. lower mount plate Bolts were extremely difficult to remove and Required use of torch, breaker bar, and come-along That took significant time to remove. trans was Rigged and removed. prior to being installed after Rebuild, took several hours to clean area of wood Chips and debris to ensure no contamination would Occur when hoses and tubes are exposed during Assembly. new ujoints were installed on front and Rear shafts at transfer case ends as well as new Joints on upper drive shaft. all transmission Related powertrain hoses were also replaced. due To condition of rubber mounts and washers, new Parts were installed. old o-rings were removed and New installed on every fitting that was disturbed During removal. with area clean and lower mount Plates loosely installed to frame, transmission Was then rigged and set in place which required Some effort to align locator dowels in lower Mounts due to weight distribution of trans rigged To crane. once in place, bolts were installed to Transfer gear case and upper mounts were Installed. once trans was completely sitting in Frame, rigging was removed and began installing Hoses to previously tagged locations ensuring plugs And caps removed before tightening. with most Hoses in place, i reinstalled implement pump and New charge pump. installed all related hoses and Tubes. cleaned steering valve of oil and debris And placed on bench. removed o-rings of disturbed Fittings and replaced with new. set steering valve Plate into position and installed mounting bolts, Hoses, and tubes. at this point, all hoses and Tubes were connected and routed. double checked Fittings to make sure all were tight. connected All harnesses that were disconnected during Removal and installed retaining bolts to all Clips. several holes required thread Chasing/tapping due to rust and debris before Bolts could be fully installed and torqued. once Hoses and connections were checked, cab was rigged And carefully set in place which required some Adjusting in order to reinstall brake valve. cab Mount bolts and safety pins were installed. brake Valve and steering hoses installed. ecm, power and Ground cables, heater hoses, and ac lines Connected. filled coolant, hydraulic, trans, and Ac. after ensuring all connections and hoses were Secure,

connected to et and downloaded product Status report for comparison of software files and Review any active codes before cranking engine. With only 1 active code in the object detection Ecm showing 1 occurrence at current hours on the Clock, i cleared old codes and events to see if Any would reset. cranked engine several times to Ensure pumps and hoses were primed and oil levels Sufficient before starting engine. topped off all Oils and coolant. at this point, i downloaded Latest software for aftertreatment, engine, def, Indication display, graphic display, and object Detection. connected to et and copied ecm Configurations and began individually flashing Ecms with latest software. found graphic display Software would not load in winflash and produced An error. downloaded software again to ensure file Was not corrupt and found to produce same result. Object detection could not be flashed Conventionally. after some troubleshooting, and Consulting with shop lead, we were able to flash The graphic display via ethernet. attempted to Also flash object detection several times via Ethernet without success before lead found a wash File to install that essentially cleared monitor And at this point was able to successfully flash Latest software. new camera cable was also Installed as i found camera to be cutting in and Out and was thought to possibly be an issue with The active code and flash issues as it shares the Same display. after successfully flashing latest Software, i performed transmission fill Calibration. because fill calibration is done at High idle, was able to bring machine to operating Temp and further inspect for leaks. 1 leak was Found at mounting flange of new charge pump. Another tech removed charge pump and found Mounting seal was cut during installation. in the Process of removal, one tube was cracked. new tube Ordered and installed. with leaks addressed, Software, and calibrations complete, i began Troubleshooting the 2348-9 abnormal update rate Code for the object detection. completed Troubleshooting to determine the display has Failed. with this in mind, i looked at a previous Job for troubleshooting the transmission and was Able to view a product status report from an Earlier date and determine that this code was Active prior to machine arriving at shop. replaced All panels that were removed for troubleshooting And brought machine outside to wash residual oil And debris from machine. ran machine around yard For some time and brought back in for inspection. Found no leaks. Contingent damage:

Jun 30, 2021	Service	22,545	Replace With Cat Reman Charge Pump	Includes replacing oil cooler and charge pump with Remans. 6/28/21 2307 stephen- charge pump was removed During trans r&i. fittings removed from old pump, Resealed, and installed on new pump. o-ring Replaced in housing and new pump installed. bolts Torqued and hoses installed.
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Jun 30, 2021	Service	22,545	Test After Repair Machine	Complaint: test machine after repair Cause: verify repair Correction: hot ran machine and inspected for Leaks, updated software and verified operation
Jun 30, 2021	Service	22,545	Clean Machine	Complaint: clean machine Cause: needed cleaned before repairs Correction: steam cleaned machine before bringing Into shop for repairs
Jun 30, 2021	Service	22,545	Troubleshoot Engine Cooling System	Complaint: coolant in the engine oil Cause: nrs cooler is leaking and circulating Through the intake and into the cylinders Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jun 30, 2021	Service	22,545	Replace Exhaust Cooler	6/28/21 2307 stephen- drained coolant and removed Clamps holding nrs cooler to bracket. removed Coolant tubes and exhaust clamps. removed nrs Cooler. with cooler removed, exhaust to inlet tube Was removed and cleaned. found this tube to be Very difficult to remove and install due to Limited clearance for tech access as well as Limited clearance for mounting bolt removal Between engine and plating. however, once tube was Removed, it was thoroughly cleaned, resealed, and Reinstalld. resealed elbows and coolant tubes and Reinstalled. installed clamps. coolant was Refilled at a later time after cab was installed And system inspected for leaks. Another tech had previously removed oil pan, pump, And spacer plate during troubleshooting. i Removed gaskets from plate and pan. i then Thoroughly cleaned pan, plate, and pump. removed Remaining gasket from block and cleaned mounting Surfaces. applied sealant to joints and with help From another tech, installed plate. i then Installed pump, pickup, and output tubes with new Seals. pan was then installed and bolts torqued And retorqued in proper sequence. removed old Filter and installed new. filled engine oil. Installed tube to cooler that was previosly Removed for access to remove pan.
Jun 25, 2021	Service	22,545	Recondition Parking Brake	6/4/21 2307 stephen Inspect park brake: disassembled park brake for Inspection. found hub and disc teeth to be Severely worn. also found springs to be packed With material from operation and rusted to the Point of compromising integrity. recommend Rebearing/reseal as well as replacing discs, hub, And springs. 6/9/21- finished complete disassembly of park Brake. cleaned and inspected all components. Reassembled with new bearing, seals, hub, springs, And friction discs. retrieved tooling and Pressure tested park brake. holding pressure and No leaks. disconnected, cleaned, and returned Tooling. cleaned area.
May 04, 2021	Service	22,476	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614

May 04, 2021	Service	22,476	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
May 04, 2021	Service	22,476	Troubleshoot Transmission	Customer stated they have lost 2nd gear and would like it troubleshot. Complaint: 2369-a.doyen--machine has lost second gear. Cause: 2369-a.doyen-4/21/21--travel to the Escanaba Mill site and located machine. spoke to the Operator and discussed the issue. machine started shifting hard into second gear about 1 week or so ago. machine was already up to temp as they have been running it just skipping over second gear. Briefly ran machine to confirm no second gear. Confirmed. connected it and downloaded a psr. Looked at psr and saw codes for the speed sensors. T/s speed sensors to eliminate them from being the issue. spoke to the customer's shop guys and they confirmed that they had done the same thing yesterday. t/s the speed sensors before replacing the modulating valve for the number 5 clutch. did a pressure check of the trans and found the number five clutch has almost no pressure. everything else was up to spec. performed a trans fill calibration. calibration was successful but with warnings. number 5 clutch is at limit. pulled a trans sample. recommended to the customer's reps trans rebuild.
Apr 20, 2021	Parts			
Apr 20, 2021	Service	22,284	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Apr 20, 2021	Service	22,284	Troubleshoot Engine Coolant	Complaint: troubleshoot cause of coolant in the engine oil based on bad oil sample report. Cause: Correction: 2369-a.doyen--4/13- traveled to the Escanaba mill and located the machine. gathered test equipment and climbed the machine to access the coolant fill. checked to insure the engine was cool enough to remove the cap. removed the cap and installed the test equipment. pumped up the cooling system to 18 psi and started a stop clock. After 30 minutes the gauge had not moved from 18 psi. the coolant leak must be very small and internal as no external leaks were noticed at this time. spoke to Todd and we both agreed that we should pull another sample. pulled sample to be sent for analysis. packed up tooling and traveled home. Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Apr 20, 2021	Service	22,284	Daily Service Truck	Verso corp Verso corp - escanaba mill 7100 county 426 m.5 rd Escanaba Mi 49829 906-233-2614
Mar 08, 2021	Service	0	Daily Service Truck	Escanaba Us highway 41, and Brebner rd Negaunee Mi 49866 906-475-4191

Mar 08, 2021	Service	21,849	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Feb 16, 2021	Parts			
Feb 16, 2021	Parts			
Feb 02, 2021	Service	0	Clean Diesel Particulate Filter	Sent dpf filter to mke to be cleaned out. shuttled Back to marquette and shuttled back to verso
Jan 28, 2021	Parts			
Jan 28, 2021	Parts			
Jan 27, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 27, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 27, 2021	Service	21,160	Remove& Install Sensor	Complaint: replace 320-3063 sensor as instructed By previous tech. Cause: mcN-2226--sensor error. sensor out of Range. previous tech troubleshot and ordered new Sensor and seal. drove to machine location. Removed failed sensor and installed new one with New seal. tested machine. active event is now Gone. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 27, 2021	Service	21,160	Troubleshoot Aftertreatment System	Complaint: continue troubleshooting aftertreatment Error. Cause: 320-3063 sensor was out of range and would Not allow engine regeneration to continue. Operator inducement level 2 was current at arrival To the machine. after replacing the sensor the Aftertreatment tests could be continued. Aftertreatment function test and nox test was Performed which cleared all inducement codes. soot Level was 0% and no active error codes. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 27, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Jan 27, 2021	Service	21,160	Remove& Install Sensor	Complaint: replace 320-3063 sensor as instructed By previous tech. Cause: mcn-2226---sensor error. sensor out of Range. previous tech troubleshoot and ordered new Sensor and seal. drove to machine location. Removed failed sensor and installed new one with New seal. tested machine. active event is now Gone. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 27, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 27, 2021	Service	21,160	Troubleshoot Aftertreatment System	Complaint: continue troubleshooting aftertreatment Error. Cause: 320-3063 sensor was out of range and would Not allow engine regeneration to continue. Operator inducement level 2 was current at arrival To the machine. after replacing the sensor the Aftertreatment tests could be continued. Aftertreatment function test and nox test was Performed which cleared all inducement codes. soot Level was 0% and no active error codes. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 19, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 19, 2021	Service	21,160	Troubleshoot Aftertreatment System	Complaint: continue troubleshooting aftertreatment Error. Cause: 320-3063 sensor was out of range and would Not allow engine regeneration to continue. Operator inducement level 2 was current at arrival To the machine. after replacing the sensor the Aftertreatment tests could be continued. Aftertreatment function test and nox test was Performed which cleared all inducement codes. soot Level was 0% and no active error codes. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 19, 2021	Service	21,160	Remove& Install Sensor	Complaint: replace 320-3063 sensor as instructed By previous tech. Cause: mcn-2226---sensor error. sensor out of Range. previous tech troubleshoot and ordered new Sensor and seal. drove to machine location. Removed failed sensor and installed new one with New seal. tested machine. active event is now Gone. Correction: Contingent damage: Complication: Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:

Jan 19, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 12, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 12, 2021	Service	21,160	Troubleshoot Fault Codes	Complaint: customer stating that the machine has Developed a 3385-13 egr intake pressure sensor : Out of calibration fault and that they cannot get It to calibrate or clear and would like to have it Diagnosed and repaired... Cause: the 320-3063 egr pressure sensor had failed And needed to be replaced... Correction: 2351...1/8/21...988k, s/n twx00768, Unity # t270, 21160 hours...traveled to the Customers location at the verso paper mill in Escanaba mi...customer stating that they had Changed the dpf filter the week prior, and that it Had a nox reduction fault that they were trouble Shooting when the egr pressure sensor fault became Active...connected to the machine with cat et and Pulled a psr...performed the trouble shooting Sensor calibration required - test (uenr0955), Reference sensor : atmospheric pressure sensor and Replace the suspect sensor. ordered the egr Sensor and the atmospheric pressure sensor...could Not perform any trouble shooting or diagnostic Tests for the e1364 (2) low aftertreatment #1 def Concentration, due to the active fault for the agr Pressure sensor... Contingent damage: Complication: due to the active fault for the egr Pressure sensor, could not diagnose the Aftertreatment fault... Labor code breakdown: 035-diagnosis/troubleshooting: 010-remove & install: 017-disassemble & assemble: 023-salvage/repair: 030-test after repair: 001-complications:
Jan 12, 2021	Service	21,160	Daily Service Truck	Escanaba Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191
Jan 06, 2021	Parts			
Jan 06, 2021	Parts			
Sep 11, 2020	Parts			
Sep 11, 2020	Parts			
Sep 11, 2020	Parts			
Feb 17, 2020	Service	17,749	Daily Truck Charge	Escanaba mill Us highway 41,and brebner rd Negaunee Mi 49866 906-475-4191

Feb 17, 2020








Service








17,749








Troubleshoot Clean
Emissions Module








Complaint:2387 customer et is not on there Computer. they need ard igniton test completed and Codes cleared
Cause:2387 ard head failure Correction:2387 2/3/20 7:28 pm customer Troubleshoot high ard fuel pressure code. they Changed ard head. et on there computer is lost, They cannot clear code and perfrom ard ignition Test. hook up computer. clear high fuel pressure Code. perform ignition test. test failed because Failure to ignite code. check for spark, ok. test Heater nozzle circuit. it is 3.54 amps which is at spec. test fuel pressure, It is at spec. peform air circuit test, it passed. Rmeove ard head. install reman ard head. perform Ignition test again, it passed. customer installed Panels that were removed.








FLUID ANALYSIS (70 Records)









Feb 26, 2026	 No Action Required	38,979	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
May 27, 2025	 No Action Required	0	Engine	SAMPLE OIL SERVICE(HRS/KMS) INFORMATION CAN SIGNIFICANTLY INFLUENCE EVALUATION OF ANALYSIS RESULTS . COPPER LEVEL IMPROVED. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Sep 16, 2024	 No Action Required	31,248	Engine	COPPER LEVEL IMPROVED. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
Jul 02, 2024	 Monitor	30,758	Engine	HIGH COPPER READING MAY BE THE RESULT OF OIL COOLER TUBE LEACHING, BUSHINGS, AN ADDITIVE IN NEW OIL OR FROM CONDENSATION. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
May 09, 2024	 Monitor	30,231	Engine	ELEVATED COPPER LEVEL MAY BE DUE TO INCREASED OIL COOLER CORE LEACHING, NOT WEAR. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
Mar 05, 2024	 Monitor	29,731	Engine	HAVE ANY REPAIRS BEEN DONE? ELEVATED SILICON & COPPER APPEAR TO BE RESIDUALS FROM A COMPOUND USED IN ASSEMBLY OR REPAIR. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
Oct 03, 2023	 No Action Required	29,218	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.











Sep 16, 2023	 No Action Required	29,128	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Sep 14, 2023	 No Action Required	29,128	Hydraulic System	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jun 01, 2023	 No Action Required	28,747	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Mar 21, 2023	 Monitor	28,850	Transmission Power Shift	LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
Mar 08, 2023	 No Action Required	28,850	Engine	NO CHANGE IN LEAD LEVEL FROM LAST SAMPLE. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. CONTINUE TO SAMPLE.
Nov 10, 2022	 Action Required	27,042	Engine	HIGH SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. LEAD LEVEL APPEARS HIGH. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. REVIEWING MAINTENANCE RECORDS, COMPONENT SERVICE LIFE ETC, MAY HELP DETERMINE A COURSE OF ACTION .
Sep 13, 2022	 Monitor	26,529	Engine	SODIUM AND POTASSIUM ARE SLIGHTLY ELEVATED. THIS MAY INDICATE A LOW LEVEL COOLANT CONTAMINATION. NO ABNORMAL WEAR SUSPECTED THIS TIME. OTHER RESULTS ARE ACCEPTABLE. MONITOR ENGINE TEMPERATURE, OIL PRESSURE AND FLUID LEVELS. OIL CHANGE REPORTED. SAMPLE IN 125 HRS TO MONITOR.










Jul 12, 2022	 Monitor	26,118	Engine	LEAD IS ELEVATED AND MAY BE SOURCED PRIMARILY TO MAIN/ROD BEARING OVERLAY WEAR. NO CONTAMINANTS (DIRT/ WATER) DETECTED. AS A PRECAUTION, CHK FOR OVERHEATING AND OPERATION AT A HIGHER LOAD FACTOR. AS OIL CHANGE REPORTED, SAMPLE IN 250 HRS TO MONITOR.
Jun 15, 2022	 No Action Required	25,850	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Dec 23, 2021	 No Action Required	23,505	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Nov 02, 2021	 Monitor	23,543	Radiator	INHIBITOR LEVEL IS TOO LOW TO PROVIDE CORROSION/EROSION PROTECTION. RECOMMEND ADDING 2 BOTTLES OF ELC EXTENDER (CAT P/N 119-5152) TO BOOST INHIBITOR. SAMPLE AGAIN AT HALF THE REGULAR INTERVAL TO MONITOR INHIBITOR LEVELS.
Nov 02, 2021	 No Action Required	23,543	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Sep 14, 2021	 Monitor	23,000	Engine	HIGH LEVELS OF SODIUM AND POTASSIUM INDICATE POSSIBLE EARLY STAGES OF COOLANT ENTRY. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. REVIEWING MAINTENANCE RECORDS, COMPONENT SERVICE LIFE ETC, MAY HELP DETERMINE A COURSE OF ACTION .
Sep 14, 2021	 No Action Required	23,000	Hydraulic System	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.









May 10, 2021	 Action Required	22,544	Engine	SAMPLE TESTED NEGATIVE FOR COOLANT CONTAMINATION BUT HIGHLY ELEVATED SODIUM AND/OR POTASSIUM LEVELS ARE THE PRIMARY INDICATORS OF COOLANT LEAKAGE. INSPECT AND REPAIR IF NEEDED. SUGGEST PRESSURIZING COOLANT SYSTEM AND INSPECT FOR COOLANT LEAK. AFTER REPAIR, CHANGE THE OIL AND FILTER(S) AND RESAMPLE AT HALF THE NORMAL INTERVAL TO MONITOR.
Apr 14, 2021	 Monitor	22,272	Engine	HIGH SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE TO SAMPLE.
Apr 05, 2021	 Action Required	22,202	Engine	HIGH SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. SUGGEST PRESSURIZING COOLANT SYSTEM AND INSPECT FOR COOLANT LEAK.
Mar 15, 2021	 Action Required	21,981	Engine	HIGHER SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. SUGGEST PRESSURIZING COOLANT SYSTEM AND INSPECT FOR COOLANT LEAK. OIL AND FILTER CHANGE NOTED.
Mar 15, 2021	 No Action Required	21,981	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Feb 04, 2021	 No Action Required	21,520	Differential Rear	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL CHANGE NOTED.
Feb 03, 2021	 Monitor	21,520	Engine	NO SIGNIFICANT CHANGE IN SODIUM AND POTASSIUM LEVELS FROM LAST SAMPLE. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE TO SAMPLE. OIL AND FILTER CHANGE NOTED.

Feb 03, 2021	 No Action Required	21,520	Differential Front	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL CHANGE NOTED.
Feb 03, 2021	 Monitor	21,520	Engine	NO SIGNIFICANT CHANGE IN SODIUM AND POTASSIUM LEVELS FROM LAST SAMPLE. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE TO SAMPLE. OIL AND FILTER CHANGE NOTED.
Dec 15, 2020	 No Action Required	20,984	Hydraulic System	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Dec 15, 2020	 Action Required	20,984	Engine	HIGHER SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. SUGGEST PRESSURIZING COOLANT SYSTEM AND INSPECT FOR COOLANT LEAK.
Dec 15, 2020	 No Action Required	20,984	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Nov 06, 2020	 Monitor	20,510	Engine	HIGHER SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. MONITOR FLUID LEVELS AND CONTINUE TO SAMPLE. OIL AND FILTER CHANGE NOTED.
Sep 19, 2020	 Monitor	19,995	Engine	SODIUM, POTASSIUM CAN BE RESIDUE OF WATER/ CONDENSATE REMOVED BY VENTING,OR SOME ADDITIVES, GREASES . OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. RESAMPLE IN 50 HOURS TO MONITOR.

Sep 19, 2020	 No Action Required	19,995	Transmission Power Shift	LPD (LARGE PARTICLE DETECTION) READING EXCEEDS RECOMMENDED CLEANLINESS LEVEL. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Jul 22, 2020	 Monitor	19,514	Engine	HIGH SODIUM AND POTASSIUM LEVELS MAY INDICATE THE BEGINNING OF A COOLANT LEAK. OTHER READINGS APPEAR TO BE NORMAL. OIL AND FILTER CHANGE NOTED. MONITOR FLUID LEVELS AND CONTINUE TO SAMPLE.
May 21, 2020	 No Action Required	19,011	Engine	COPPER ALONE USUALLY INDICATES COOLER CORE LEACHING AND IS NOT NORMALLY WEAR OF BRONZE/BRASS PARTS. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
May 21, 2020	 No Action Required	19,011	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
May 21, 2020	 No Action Required	19,011	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
May 21, 2020	 No Action Required	19,011	Engine	COPPER ALONE USUALLY INDICATES COOLER CORE LEACHING AND IS NOT NORMALLY WEAR OF BRONZE/BRASS PARTS. OTHER READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
May 21, 2020	 No Action Required	19,011	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE NORMAL INTERVAL. OIL AND FILTER CHANGE NOTED.
Feb 21, 2020	 No Action Required	18,018	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.

Feb 19, 2020	 No Action Required	18,018	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Dec 20, 2019	 No Action Required	17,502	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Nov 13, 2019	 No Action Required	17,035	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Oct 07, 2019	 No Action Required	16,981	Hydraulic System	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Sep 27, 2019	 No Action Required	16,981	Transmission Power Shift	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Sep 27, 2019	 No Action Required	16,981	Engine	READINGS APPEAR TO BE NORMAL. CONTINUE SAMPLING AT THE RECOMMENDED INTERVAL.
Aug 07, 2019	 No Action Required	16,020	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jun 21, 2019	 No Action Required	15,499	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jun 21, 2019	 No Action Required	15,499	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Apr 30, 2019	 No Action Required	14,953	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

Mar 19, 2019	 No Action Required	14,533	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Mar 19, 2019	 No Action Required	14,533	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Feb 18, 2019	 No Action Required	14,080	Hydraulic System	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Feb 18, 2019	 No Action Required	14,080	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Feb 18, 2019	 No Action Required	14,080	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jan 16, 2019	 No Action Required	13,502	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jan 16, 2019	 No Action Required	13,502	Differential Rear	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jan 16, 2019	 No Action Required	13,502	Differential Front	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jan 16, 2019	 No Action Required	13,502	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

Dec 04, 2018	 No Action Required	13,029	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Nov 21, 2018	 No Action Required	12,485	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Nov 21, 2018	 No Action Required	12,485	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Oct 22, 2018	 No Action Required	12,100	Hydraulic System	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Oct 22, 2018	 No Action Required	12,100	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Aug 08, 2018	 No Action Required	11,595	Transmission Power Shift	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Aug 08, 2018	 No Action Required	11,595	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.
Jun 08, 2018	 No Action Required	10,989	Engine	NO PROBLEMS PRESENTLY ASSOCIATED WITH THIS SAMPLE. CONTINUE SAMPLING AT THE NORMAL INTERVAL.

COVERAGE HISTORY (1 Records)

Product Code	Description	Issue Date	End Date	Start Hours	End Hours
988K	CERTIFIED REBUILD TC AND TRANS 36/ 5000	Sep 20, 2023	Sep 20, 2026	0	5,000

CONFIGURATION (38 Records)

Configuration Code	Description
1073533	SEGMENTS,HD, BOLT-ON, SET OF 7
2036992	TIRES, 35/65 R33 * BS L5 VSDL
2297121	TIP, EXTRA DUTY
3463863	VISOR, CAB
3474900	LIFT, STANDARD 2V
3474960	BUCKET-ROCK 10.0 CYD
3475028	FENDERS, ROADING
3475045	DECALS, ANSI
3475105	NO SOUND SUPPRESSION
3475108	FUEL TANK, FAST FILL
3475246	AXLES, STANDARD
3566437	PROTECTORS, SIDEBAR (SET OF 2)
3608184	LIGHTS, HID
3661928	ENGINE, STANDARD
3672710	LOADER, STANDARD
3675432	COOLER, AXLE OIL
3675580	AUTOLUBE, CENTROMATIC
3723042	DETECTION, OBJECT (RADAR)
3729038	GUARD, CRANKCASE
3737057	RIDE CONTROL
3739357	HYDRAULIC ARRANGEMENT, CANADA
3746450	STARTING, COLD WEATHER
3747404	HEATER, ENGINE COOLANT, 120V
3754687	CAB GLASS, STANDARD
3761572	OIL CHANGE SYSTEM, HIGH SPEED
3764801	CAB DOOR, SLIDING WINDOW (LH)
3766936	STEERING, STANDARD
3767034	MIRRORS, HEATED
3767128	LIGHT, WARNING (LED STROBE)
3767135	RADIO, SIRIUS/USB/BLUETOOTH
3779320	PRECLEANER, TURBINE

3814540	SEAT BELT, 3", 2-POINT, MINDER
3832164	PRECLEANER, STANDARD
4333842	WEATHER AR, STANDARD
4351139	PRODUCT LINK PL321
4351144	HYDRAULIC OIL, STD
4675822	CPM PAYLOAD WEIGHING READY
4696682	SEAT, HTD & VNT
