How to do a pre-shift walkaround on an underground drill rig (E1C DH Boomer)

This procedure shows you how to do a pre-shift walkaround on an underground drill rig, using the Epiroc E1C DH Boomer as the example. The same walkaround applies to E-series, M-series, and S-series boomers. You work around the machine from the left side to the rear, the right side, the front, and the feed beam, ticking each item as you check it.

Prerequisites

Before you start the pre-shift walkaround on an underground drill rig, confirm the following:

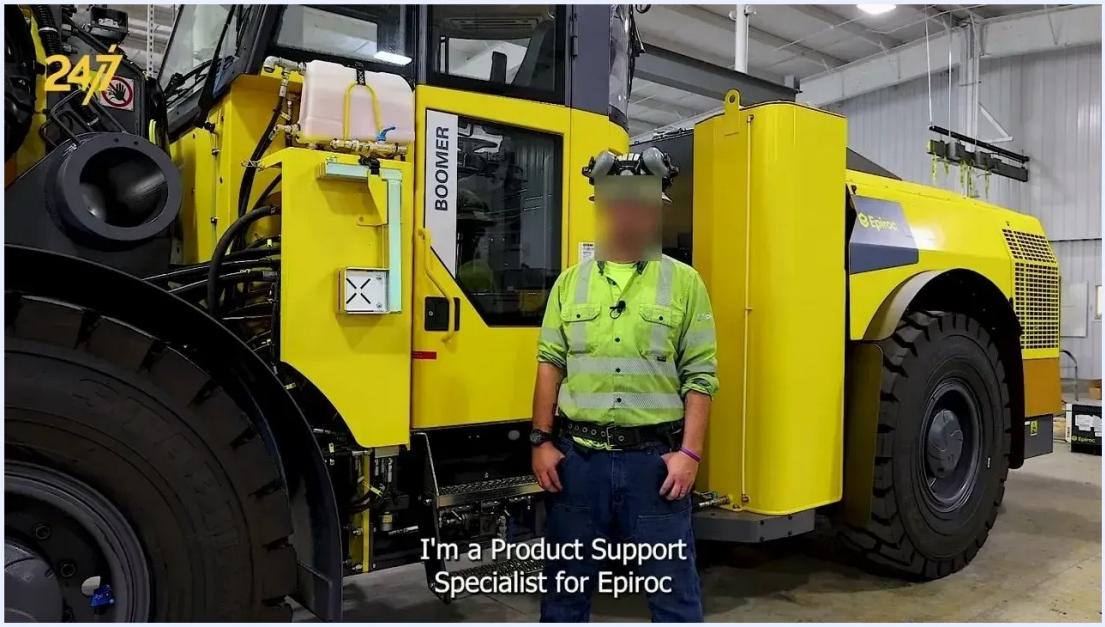
- You are wearing appropriate personal protective equipment (PPE), including high-visibility gear and a helmet.
- The machine is in a well-lit, organized area.
- You can tag out and lock out the master switch if your inspection or maintenance requires it.
- You know how to record and report defects under your facility's maintenance procedures.

Equipment details

Complete this block before you begin the walkaround.

- [ ] Equipment ID: _____
- [ ] Equipment type: Underground drill rig (Boomer)
- [ ] Model: E1C DH (or other E-series, M-series, or S-series boomer): _____
- [ ] Hour meter: _____
- [ ] Location: _____
- [ ] Shift: _____

- [ ] Inspector: _____



Operator in high-visibility gear and a helmet standing beside the left side of a yellow Epiroc Boomer in a well-lit facility, ready to begin the walkaround

Start the walkaround on the left side of the machine. The walkaround does not give equipment ID, hour meter, location, shift, or inspector details, so record them according to your site's own process.

Safety systems

Work through each safety item and tick it only when you have confirmed it. The walkaround does not cover brakes, alarms, or seat belts. Add those checks from your site's own procedure if they apply.

Remove the machine from service until an item is addressed if you cannot confirm it. The walkaround does not define severity thresholds. Address every issue before you operate the machine, and report it under your facility's maintenance procedures.

Check the fire suppression system

Check the fire suppression system as part of your pre-shift walkaround on the underground drill rig. Several points are spread around the machine.

- [ ] Open the engine compartment and find the fire suppression cap, which is clearly labeled and connected to the fire suppression nozzle.
- [ ] Confirm the cap is securely in place and undamaged.

- [ ] Confirm all related hoses and fittings are properly connected, with no signs of wear or leaks.
- [ ] Confirm all fire suppression nozzle caps on the machine are present and securely fitted, with no leaks or missing caps.
- [ ] At the DEF tank, confirm the pin for the fire suppression system is present.



Engine compartment showing the labeled fire suppression cap, with hoses, wiring, and mechanical components visible

Next, check the fire suppression activation button.

- [ ] Find the fire suppression system emergency button on the exterior of the cab, near the door labeled "BOOMER."
- [ ] Confirm the safety pin is inserted in the button mechanism.
- [ ] Push the button in and twist it. Confirm it returns to its original position smoothly.
- [ ] Inspect the cables connected to the button for secure attachment and no visible damage.

- [ ] Confirm the button shows no signs of damage.



Worker testing the fire suppression button on the cab exterior next to the "BOOMER" label

Check the emergency stop

- [ ] Move to the right side of the cab and find the emergency stop (e-stop) button.
- [ ] Press the e-stop to confirm it engages.
- [ ] Twist the e-stop to confirm it resets and pops back out.
- [ ] Inspect the cables connected to the e-stop for damage or loose connections.

Check the steering lock and cab glass

- [ ] Find the steering lock on the machine.
- [ ] Twist and unlock the mechanism. Confirm it operates smoothly and is present and functional.
- [ ] Check the cab glass for cracks, chips, or other damage.
- [ ] Inspect the water mist valves to confirm they are intact and operational.

- [ ] Confirm the valves are not leaking and are in the correct position.



Technician bent over near the cab steps, checking the glass and water mist valves for damage or leaks, with the "BOOMER" cab door visible

Check the lights and alignment laser

Check the lights at the rear, the front, and the top of the cab.

- [ ] Inspect all rear lights for cracks or damage.

- [ ] Confirm no damage would prevent the rear lights from functioning properly.



Rear of the machine with the rear lights visible above the compartment

- [ ] Identify the work lights on the lower front chassis.
- [ ] Check that all front light lenses are intact, with no cracks or visible damage.
- [ ] Check for broken mounts or exposed wiring.

- [ ] Confirm the lights are securely attached and properly aimed.



Worker in front of the machine inspecting the front work lights and their lenses

- [ ] Look for signs that the front lights may not be working, such as broken bulbs or loose wires.
- [ ] Confirm all lenses are clear and undamaged.

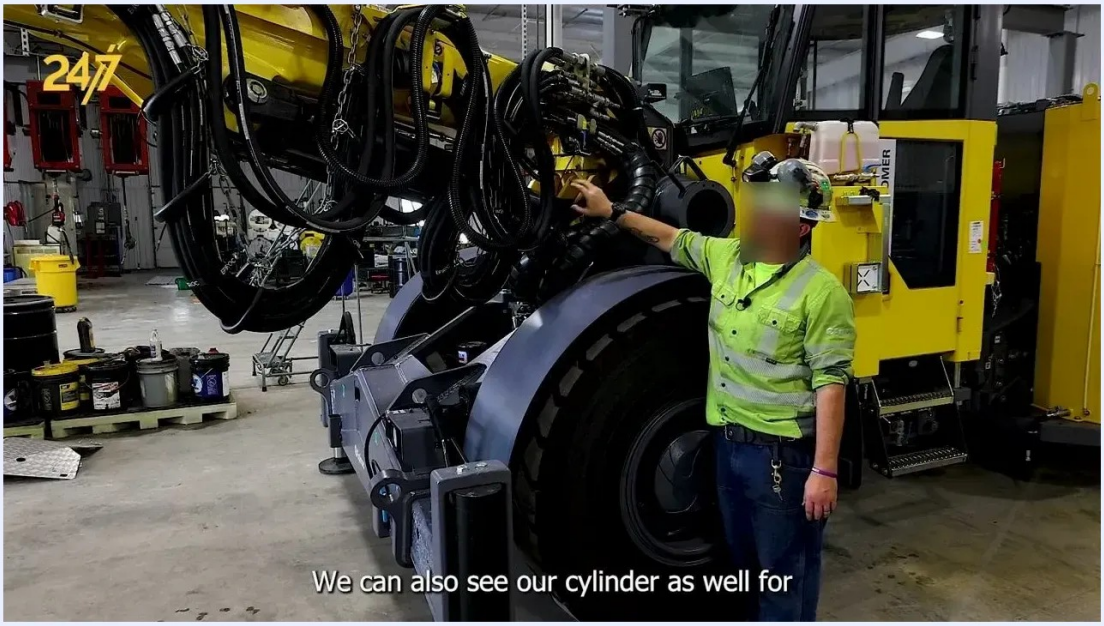
- [ ] Document any issues for maintenance.



Worker in high-visibility gear visually checking the front lights for cracked lenses or signs they would not work

- [ ] Look to the top of the cab and find the larger drilling lights and the two smaller driving lights.
- [ ] Confirm all lights are present, securely mounted, and free from damage.

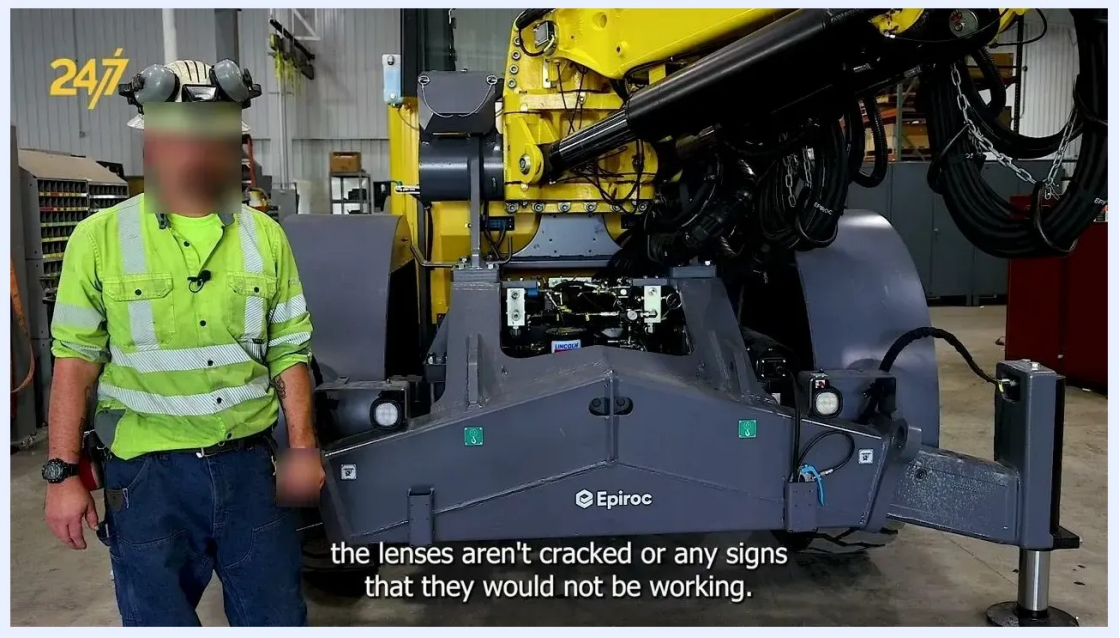
- [ ] Confirm the drilling lights and the driving lights are clean and functional.



Worker pointing to the larger drilling lights and smaller driving lights at the top of the cab

- [ ] Find the alignment laser just below the drilling lights on the front of the cab.
- [ ] Inspect the laser housing for damage or misalignment.

- [ ] Confirm the laser is clean, unobstructed, and securely mounted.



Worker pointing to the alignment laser below the drilling lights on the cab

Check the access steps

- [ ] Examine the steps leading up to the cab.
- [ ] Confirm the steps are flexible, securely attached, and free from cracks or excessive wear.
- [ ] Confirm the steps provide safe access to the cab.

Mechanical checks

These checks cover fluids, leaks, tires, cooling, greasing points, the feed beam, and structural condition. Look for oil, coolant, or other leaks and for visible damage at every stop. Remove the machine from service until you address any item you cannot confirm.

Check fluids and the left-side engine compartment

Start the left-side pass of the pre-shift walkaround on the underground drill rig here.

- [ ] Raise the left side engine compartment bay door.
- [ ] Below the A50 cabinet, check the engine oil level dipstick.
- [ ] Check the engine oil fill port.
- [ ] Check the fuel water separator.
- [ ] Check the fuel water separator drain.

- [ ] Check the coolant level fill button.
- [ ] Check for engine oil or coolant leaks within the compartment.

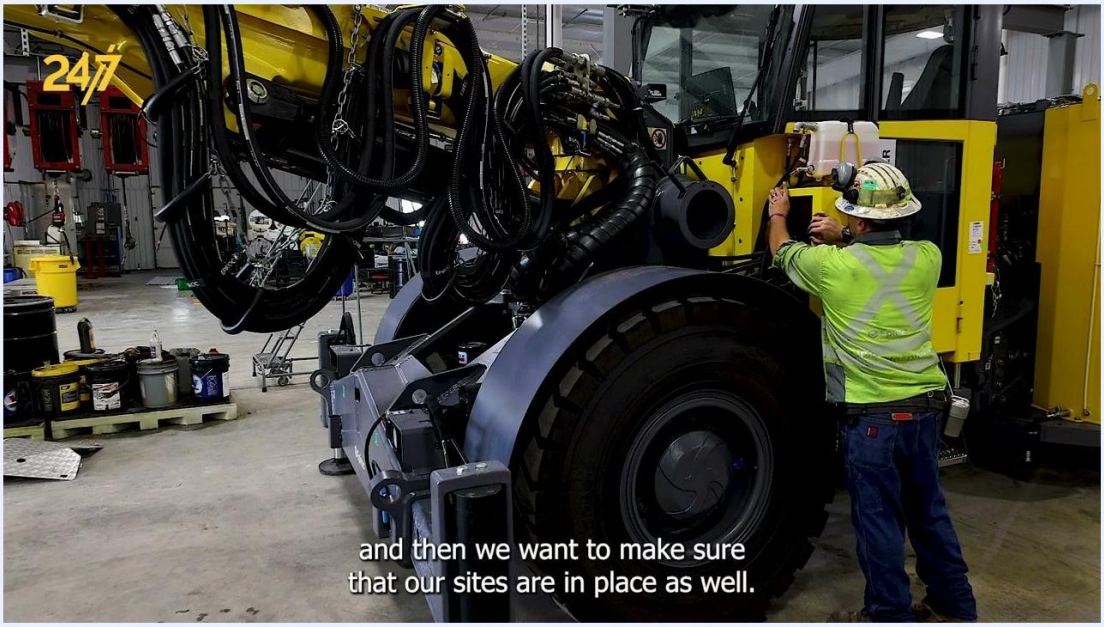


Operator pointing to the lower section of the compartment, showing the engine oil dipstick and related components

Check the sight indicators on the left side of the machine as well.

- [ ] Move to the left side of the machine.
- [ ] Confirm all sight glasses, indicators, and safety markers are present and undamaged.

- [ ] Touch or point to each sight to confirm it is properly installed.



Technician checking the sight indicators on the left side of the machine

Check the rear compartment

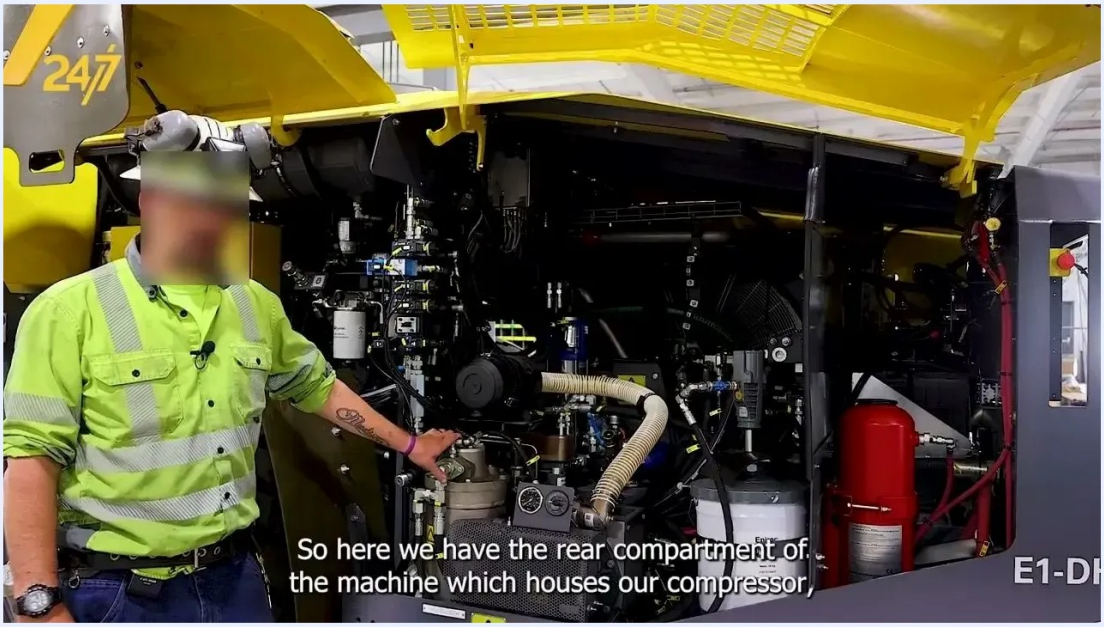
The rear compartment contains the compressor, pump stack, cooling fans, coolant housing with sight glass, the grease bucket for the manual greaser, and the Ansul fire suppression system.



Operator at the open rear compartment, pointing to the compressor, pump stack, hoses, and fittings with the yellow compartment door raised

- [ ] Find the sight glass on the compressor.
- [ ] Confirm the oil level is at the top of the sight glass.

- [ ] If the level is low, remove the fill plug and top up the oil.



Operator pointing to the compressor oil sight glass and fill plug

- [ ] Find the compressor air cleaner and confirm it is present and properly secured.



Operator indicating the cylindrical black air cleaner attached to the compressor assembly

- [ ] Check the water pump and its fittings for leaks.

- [ ] Confirm all connections are tight and undamaged.
- [ ] Ensure the cooler fins are clean and free of debris.
- [ ] Check for leaks around the cooler.



Operator pointing to the cooler and its fins, showing where to check for cleanliness and leaks

- [ ] Find the diesel tank fill port at the back of the machine and identify it for refueling.
- [ ] Find the water fill valve at the rear of the machine.

- [ ] Confirm the water fill valve is tight and not cracked.



Operator pointing to the yellow water fill valve at the rear of the machine

Check the right rear and right side

- [ ] Move to the right rear of the machine and find the DEF tank door.
- [ ] Open the door, fill DEF as needed, and latch the door securely.
- [ ] While at the DEF tank, check for leaks in the area.

- [ ] Through the grill, inspect the cooling system fins for obstructions, debris, and leaks.



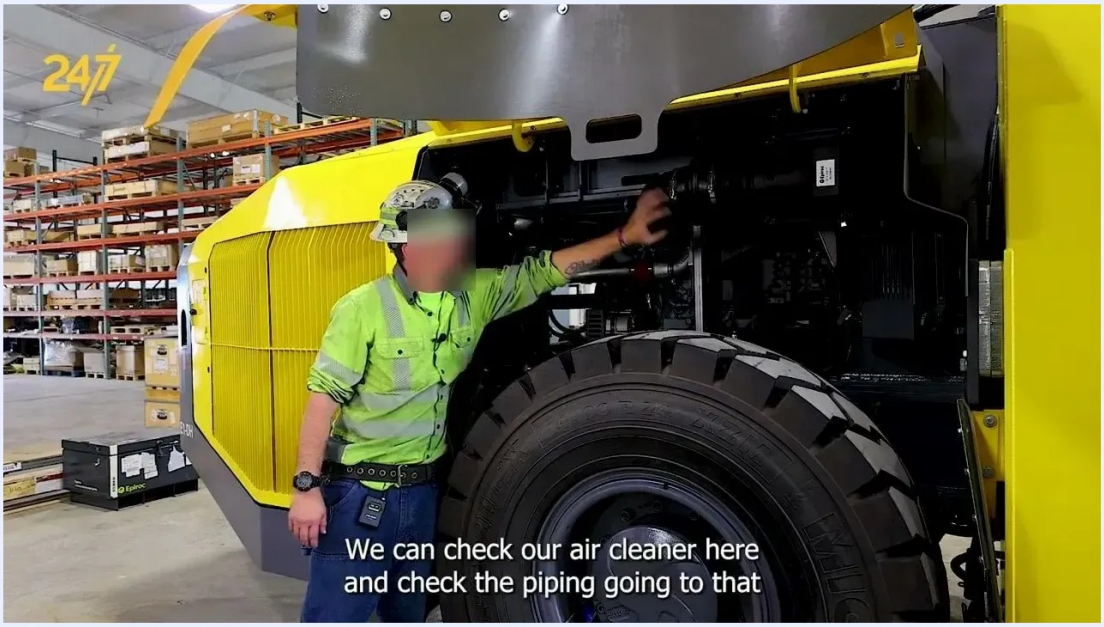
Operator pointing to the cooling system fins on the right rear side of the machine

- [ ] Move to the right side and lift the hood to access the engine bay.
- [ ] Inspect the engine components visible from this side.
- [ ] Find the driveline and inspect it for visible issues.



Operator lifting the hood on the right side of the machine to inspect the engine bay

- [ ] Find the air cleaner in the engine bay.
- [ ] Inspect the piping going to the air cleaner and from the turbo.
- [ ] Confirm there are no leaks and all clamps are tight.



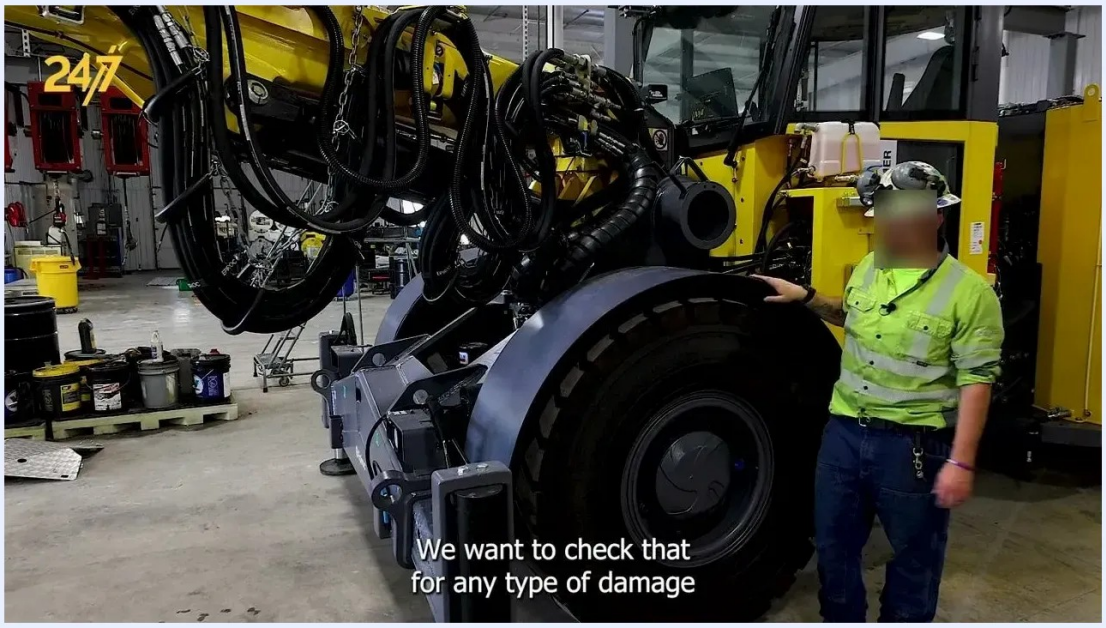
Operator pointing to the air cleaner and its piping in the engine bay, with the driveline labeled and visible

Check tires and planetary gearboxes

Move to the side of the machine where the tires are accessible, and repeat the checks on the right-hand side.

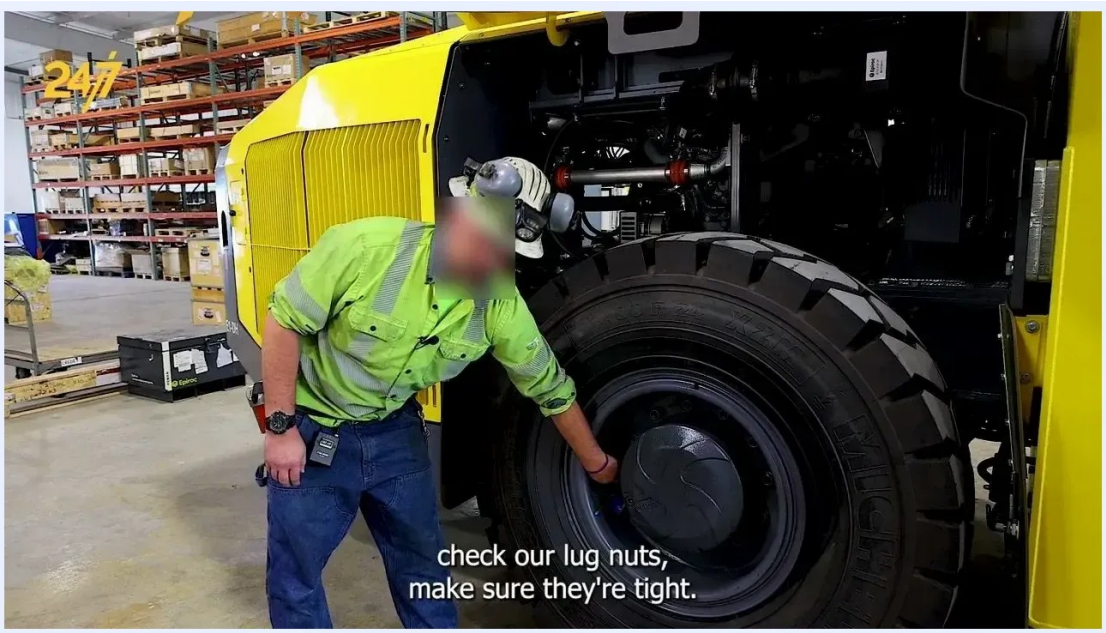
- [ ] Inspect the tire tread for adequate depth and even wear.
- [ ] Inspect the sidewalls for cuts, cracks, bulges, or other damage.

- [ ] Measure the air pressure in each tire and confirm it matches the manufacturer's recommended value.



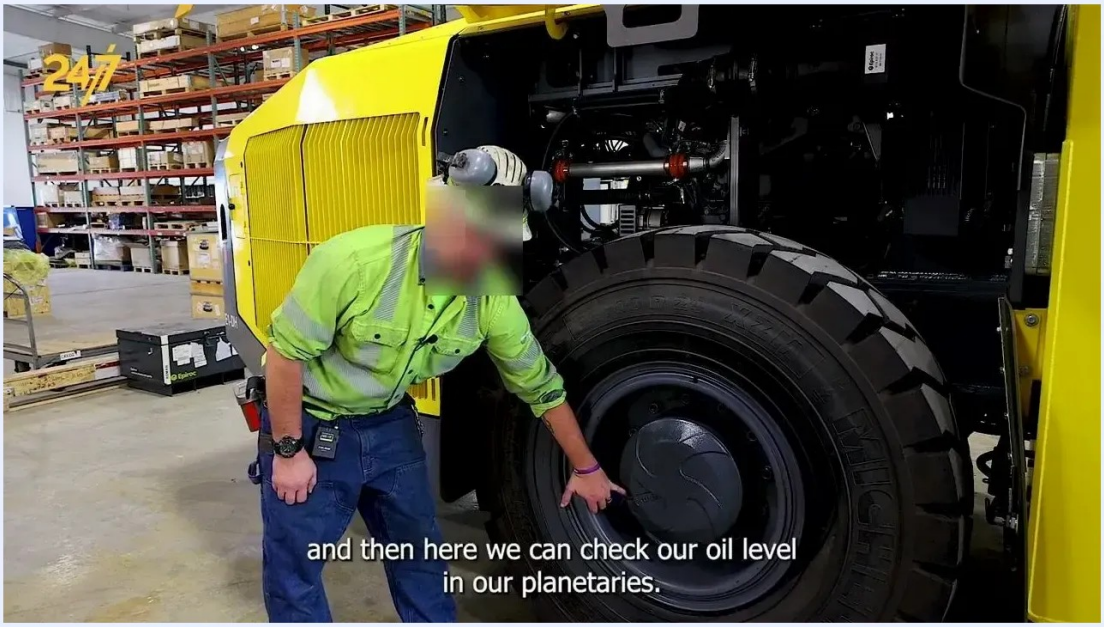
Worker in high-visibility gear inspecting the right-side tire for damage

- [ ] Check that all lug nuts are present and tight, with no sign of looseness or movement.



Worker checking the lug nuts on a large tire for tightness

- [ ] Find the planetary gearbox at the wheel hub and identify the oil level check point or sight glass.
- [ ] Confirm the oil level is within the recommended range and top it up if necessary.
- [ ] Look for oil leaks around the planetary housing.



Worker pointing to the planetary gearbox oil check point on the wheel hub

Check the water tank and bolter seals

This applies to E1C DHs and self-contained bolters.

- [ ] Move to the area near the bolter and the water tank on the right-hand side.
- [ ] Check the seal at the top of the bolter compartment or tank for integrity, wear, cracks, and leaks.

- [ ] Use the sight glass to confirm there is sufficient water in the tank.



Worker by the yellow bolter compartment and water tank, pointing to the seal and sight glass

- [ ] Find the drain valve at the bottom of the tank.
- [ ] If water sediment is present, open the drain valve to remove the sediment or excess water.
- [ ] Close the valve securely after draining.

- [ ] Empty the tank before moving the machine outdoors in cold weather.

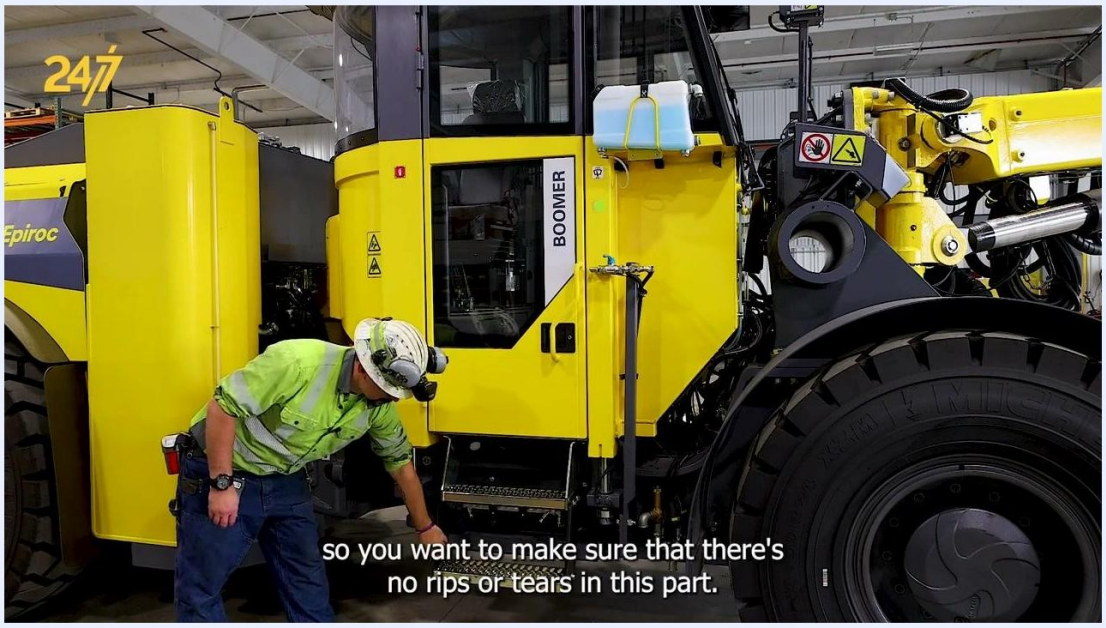


Worker pointing to the lower section of the water tank, showing the drain and sight glass

Check the boot, condenser, and rear chassis

- [ ] Move to the area below the cab entry steps, near the front right tire.
- [ ] Examine the boot for rips or tears and confirm the material is intact.

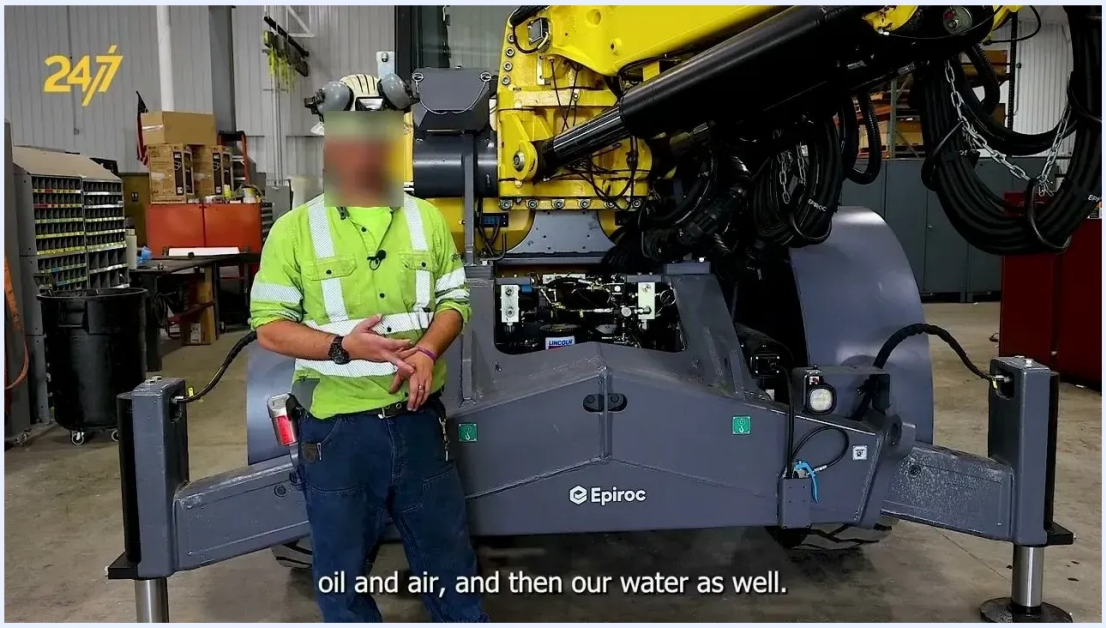
- [ ] Find the boot wash spray nozzles beneath the steps and confirm they are present and unobstructed.



Worker inspecting the area below the cab steps, pointing to the boot and boot wash sprays

- [ ] Move to the rear section of the cab, near the back right corner, and find the AC condenser.

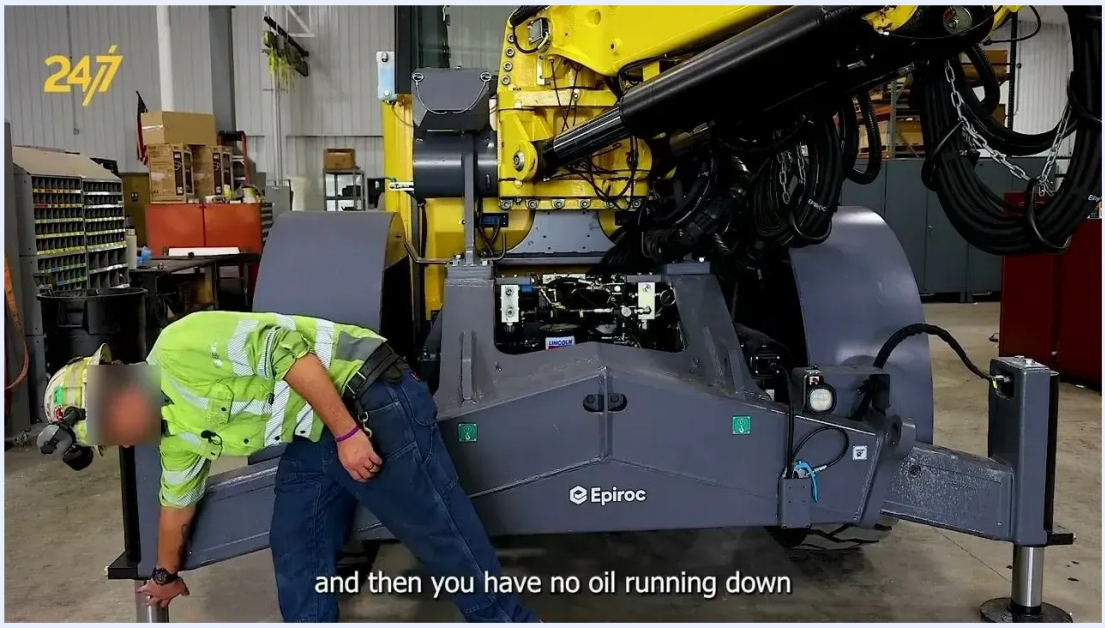
- [ ] Confirm the condenser is securely mounted and free from visible damage or obstructions.



Worker at the rear of the cab indicating the AC condenser

- [ ] Move to the rear chassis area, behind the cab and between the rear stabilizers.

- [ ] Inspect the chassis and surrounding components for oil running down or pooling.

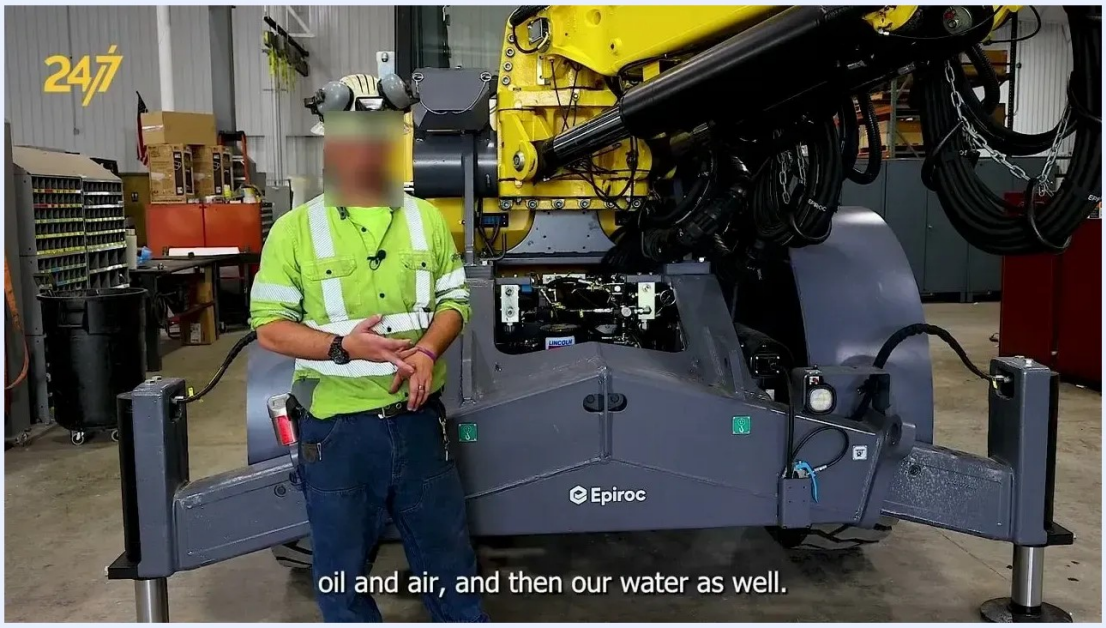


Worker bending down at the rear chassis to check for oil leaks

Check greasing points and fill points

- [ ] Find the auto greaser unit, labeled "LINCOLN," at the rear chassis.
- [ ] Confirm it is present, properly mounted, and filled to the appropriate level.
- [ ] Find the auto greaser fill point and confirm it is accessible and free from contamination.
- [ ] Find the hydraulic oil, air, and water fill points in the same area.

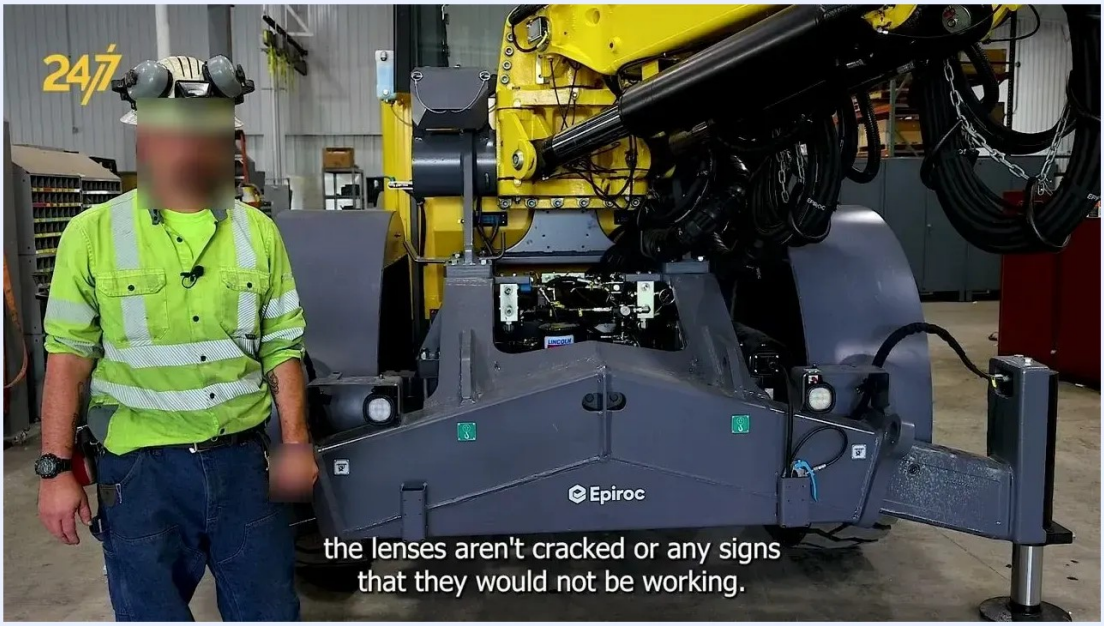
- [ ] Confirm all fill points are clearly labeled, capped, and free from leaks or debris.



Worker in front of the rear chassis pointing out the auto greaser and fluid fill points

- [ ] Move to the front of the machine and find the hand grease fitting on the lower front section.
- [ ] Confirm the fitting is accessible, undamaged, and free from contamination.

- [ ] Identify and check all hand grease points. Some components require manual greasing.



Worker pointing to the hand grease fitting on the front chassis

Check the feed beam and drifter

Move to the feed beam of the E1C DH, or of a similar model such as an S-frame or M-frame boomer. The main drifter is labeled "COP MD20" by Epiroc.



Close-up of the feed beam assembly on the E1C DH, showing the COP MD20 drifter, hydraulic hoses, and cable routing

- [ ] Confirm the drifter is the MD20, 20 kilowatt model.
- [ ] Visually inspect the mounting points of the drifter on the feed beam.
- [ ] Confirm the drifter is secured to the slide at all four corners.
- [ ] Confirm all bolts and fasteners at each corner are present and properly tightened.

- [ ] Confirm the drifter is firmly attached and does not shift or move.



Technician closely inspecting the COP MD20 drifter mounting points on the yellow feed beam

- [ ] Find the return cable attached to the drifter assembly.
- [ ] Confirm the nut securing the return cable is present and properly tightened.

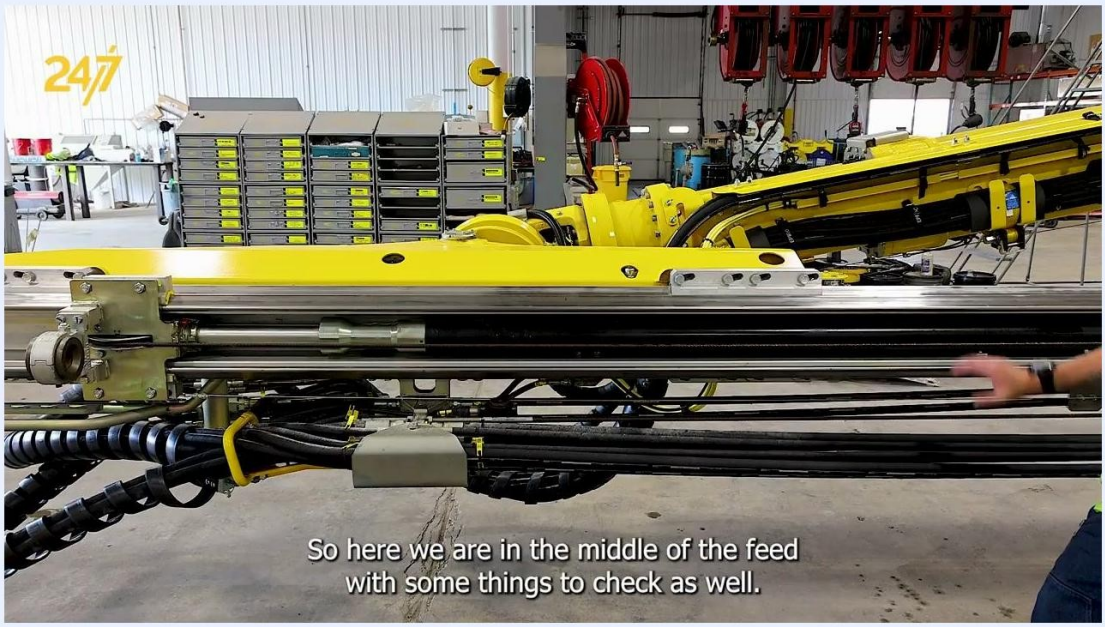
- [ ] Check the cable for fraying, kinks, or other signs of wear.



Technician pointing to the return cable and its securing nut on the feed beam assembly

- [ ] Examine the pull rope and return rope for fraying, kinks, or excessive wear.
- [ ] Check the tension of each rope by gently pressing or pulling. Do not slide your hand along the rope, to avoid injury.

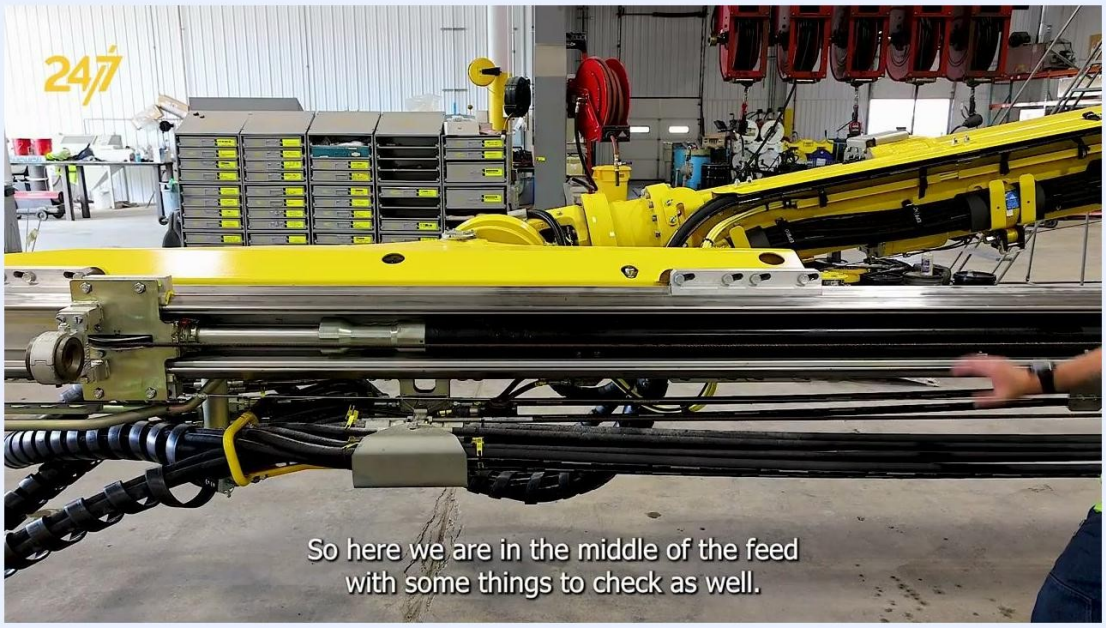
- [ ] Confirm the ropes are properly routed and securely attached at both ends.



Technician checking the pull rope and return rope for wear and testing the tension without sliding a hand along the rope

- [ ] Find the shank adapter at the front of the drifter.
- [ ] Inspect the threads for wear, rounding, or damage.

- [ ] Confirm the adapter is securely installed and free of cracks or deformation.



Technician examining the shank adapter at the front of the COP MD20 drifter

- [ ] Identify the stainless steel sliding and cover pieces along the feed beam.
- [ ] Run your hand gently across the surface to check for sharp edges or exposed aluminum.
- [ ] Confirm the covers are smooth, securely attached, and free from excessive wear or damage.

- [ ] Note any sharp edges or exposed aluminum for maintenance.



Technician running a hand across the stainless steel sliding and cover pieces to check for sharp edges and wear

Check the traveling centralizer and front centralizer

- [ ] Find the traveling centralizer on the feed beam.
- [ ] Inspect the centralizer, bushing, and shiv for debris, rocks, or buildup that could impede movement.
- [ ] Confirm all mounting bolts and fasteners are tight and secure.

- [ ] Confirm the centralizer moves freely along its track and is not obstructed.



Close-up of the traveling centralizer assembly on the yellow feed beam

- [ ] Examine the bushing for wear or damage.
- [ ] Inspect the shiv for accumulated debris or rock.

- [ ] Confirm the area around the centralizer is clear and accessible for routine checks.

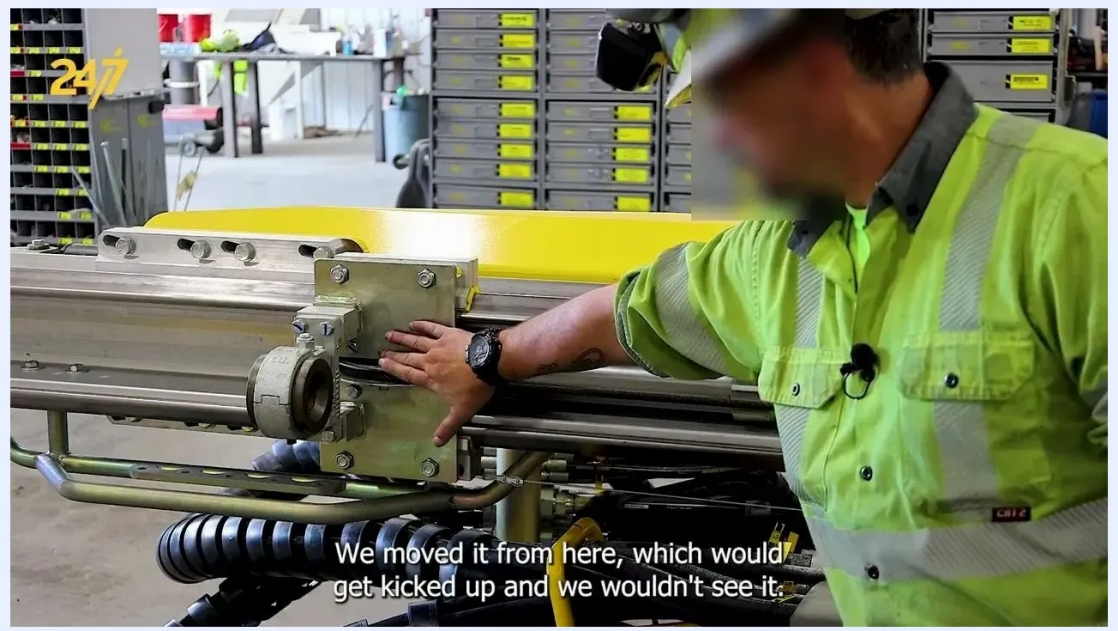


Technician pointing to the centralizer bushing and shiv, showing where debris can collect

The centralizer has been relocated for easier inspection and maintenance access. It moved from a less visible location to a more accessible spot on the feed beam.

- [ ] Confirm the new position allows easy inspection and cleaning.

- [ ] Confirm the mounting is secure in the new location.



Technician placing a hand on the mounting bracket to show the centralizer's new, more accessible position

- [ ] Move to the front end of the feed beam and inspect the front centralizer. It is critical for starting the drill hole straight and maintaining steel alignment.

- [ ] Confirm it is intact, properly aligned, and free from visible damage.



Technician at the front of the feed beam resting an arm on the front centralizer

Check the boom rotation units

- [ ] Find the two rotation units at the front of the boom. They allow the feed to swing in multiple directions.
- [ ] Confirm the units are securely mounted and free from visible leaks or damage.

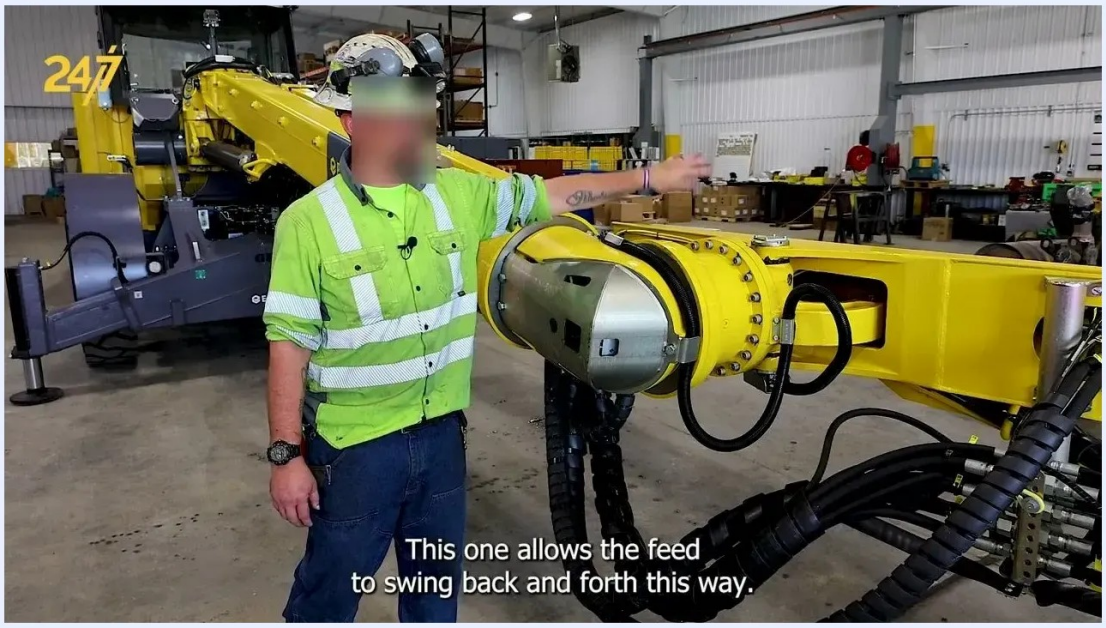
- [ ] Check the seals for leaks. The units are oil-filled.



Technician at the front of the boom pointing to the yellow and silver rotation units and their hoses and cables

- [ ] Observe the swing direction of the feed that the rotation units allow.

- [ ] Inspect the area around the rotation units for signs of oil leakage, which could indicate seal failure.



Technician gesturing to show the swing direction of the feed, with the rotation units, hoses, and feed beam visible

Hydraulic checks

These checks cover hydraulic oil, hoses, fittings, cylinders, and valves. Look for cuts, leaks, loose fittings, abrasions, and any wear or damage that could cause operational issues. Remove the machine from service until you resolve any leak or damaged line.

Check the hydraulic oil level and left-side lines

- [ ] At the indicator in the upper section of the left-side compartment, check the hydraulic oil level.

- [ ] If the level is low, use the nearby fill button to top up the hydraulic oil.



Operator pointing to the hydraulic oil level indicator and fill button inside the open compartment above the left front tire

- [ ] Examine all visible cables and hoses, including air hoses and those connected to the cabinet, for cuts, leaks, and loose fittings.

- [ ] Look for any signs of wear or damage that could cause operational issues.

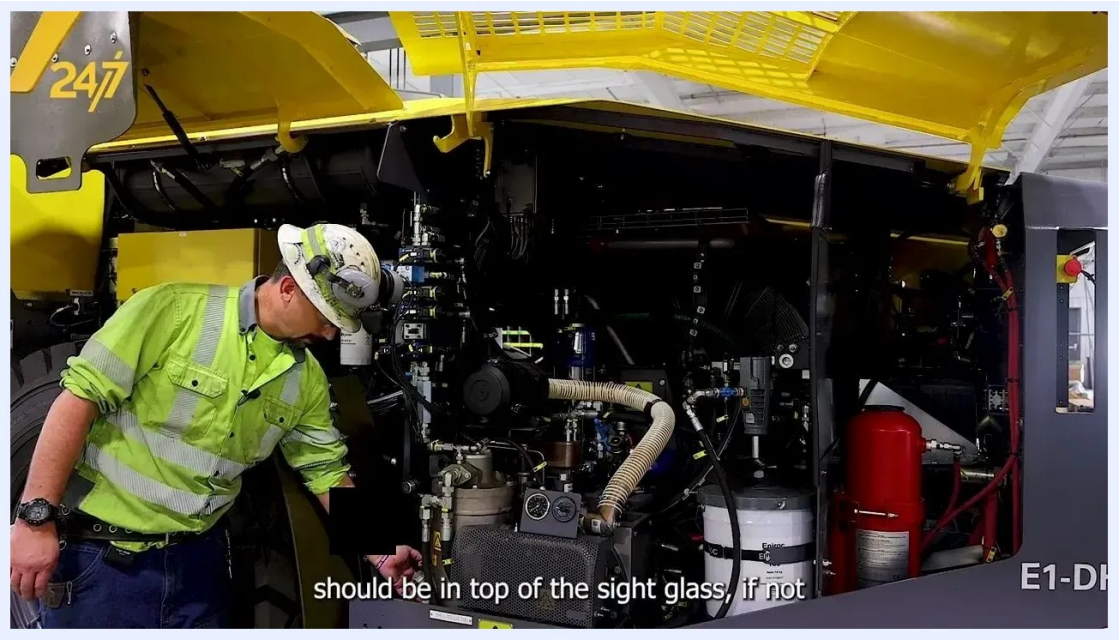


Operator inspecting cables and hoses beneath the A50 cabinet for damage or leaks

Check the rear pump stacks and valve stack

- [ ] Find the A52 panel, the yellow box mounted above the rear tire, and the pump stacks at the rear of the chassis.

- [ ] Inspect the pump stacks for loose fittings, leaks, or damaged hoses.



Operator pointing to the A52 panel and pump stacks to check for loose fittings and leaks

- [ ] Find the valve stack for the compressor and rear jacks.
- [ ] Visually confirm it is intact and free from leaks or damage.

Check hydraulic and electrical connections

Do this check in a well-lit workshop or maintenance bay.

- [ ] Inspect all hydraulic and electrical connections on the machine.
- [ ] Confirm every connection is secure and tight.

- [ ] Look for loose fittings or signs of wear.



Technician in high-visibility clothing checking the hydraulic and electrical connections on a large yellow drilling machine

Check the transmission, pump, and lines

- [ ] Open the access panel to view the transmission and pump.
- [ ] Confirm these components are present and securely mounted.
- [ ] Check all visible hydraulic and fluid lines for leaks, abrasions, cuts, or loose fittings.
- [ ] Confirm there is no damage from rockfall, impact, or sharp objects.

- [ ] Confirm all lines are properly routed and clamped.



Worker inspecting the open compartment, focusing on hydraulic lines and fittings for rockfall damage

Check hoses, fittings, and drains near the cab steps

- [ ] Inspect the visible hoses and fittings below the cab entry steps for cracks, leaks, or signs of wear.
- [ ] Confirm all hose connections are tight and secure.

- [ ] Look for fluid residue or damage that could indicate a leak.



Worker beside the cab inspecting hoses and fittings near the entry steps for cracks or leaks

- [ ] Find the water mist system drain valve below the cab steps and confirm it is present and properly installed.

- [ ] Check that the steel braid on the associated hose is intact and securely in place, with no fraying or separation.

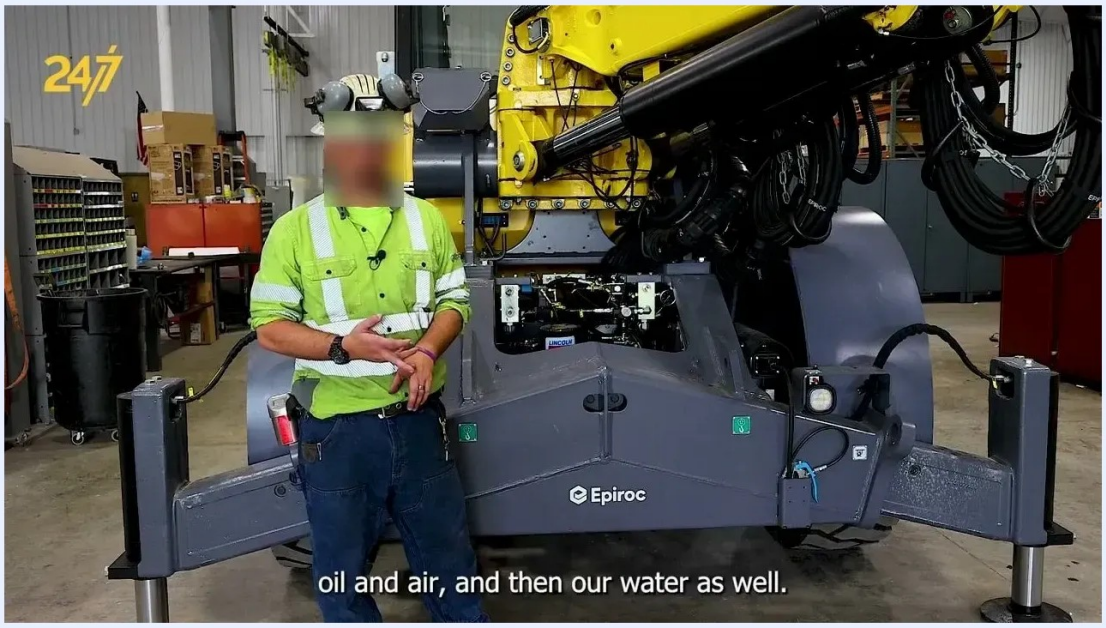


Worker bending down to point to the water mist system drain and check the steel braid on the hose

Check the jack and outrigger valves and the flushing valve

- [ ] Move closer to the central chassis area.
- [ ] Identify the valves for the jacks and outriggers. Confirm they are properly labeled and free from leaks.
- [ ] Find the air regulator and pressure gauge for the lubrication system.

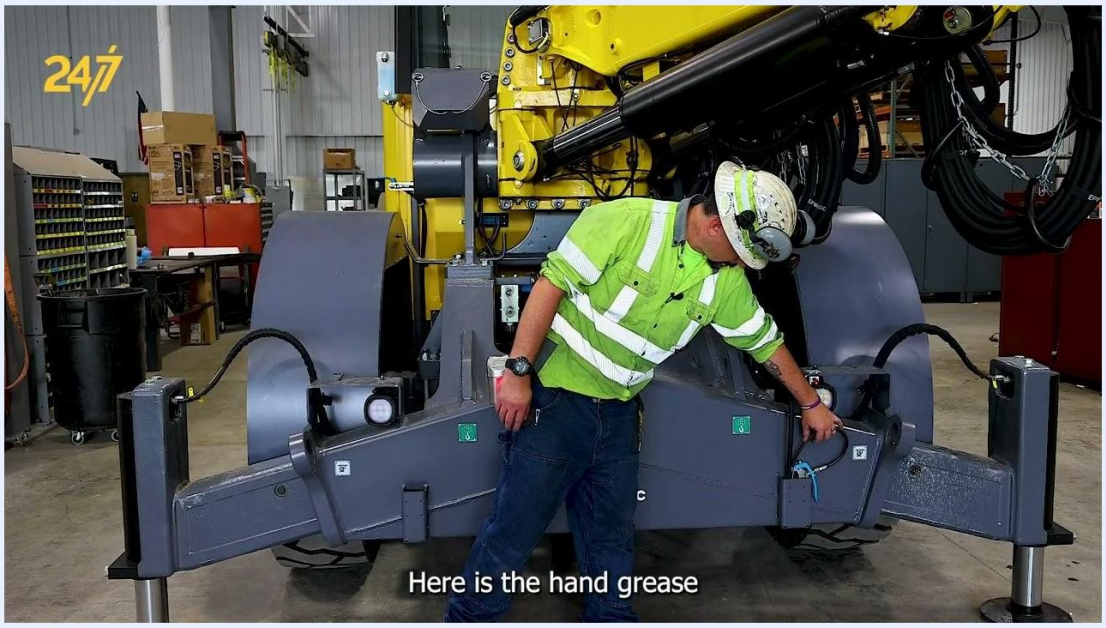
- [ ] Confirm all components are securely mounted, undamaged, and functioning correctly.



Close-up of the central chassis area showing hydraulic valves, labeled hoses, the Lincoln auto greaser, air regulator, and pressure gauge

- [ ] Open the front chassis compartment.
- [ ] Find the flow valve for the flushing system behind the main hydraulic components.
- [ ] Find the hand grease pump, labeled "LINCOLN," centrally in the compartment.
- [ ] Confirm all valves, pumps, and fittings are securely mounted, free from leaks, and clearly labeled.

- [ ] Inspect the surrounding hoses and connections for wear or damage.



Open front chassis compartment showing hydraulic lines, the LINCOLN hand grease pump, and the flow valve for flushing

- [ ] Examine all visible cables and fittings near the front chassis and boom base.
- [ ] Check for secure connections, no fraying, and no exposed wires.
- [ ] Inspect the grease lines for proper routing, secure fittings, and no leaks.
- [ ] Document any issues for repair.

Check the boom feed hoses, cylinder, and inclinometer

- [ ] Move to the side of the machine to reach the boom feed area.
- [ ] Inspect all hydraulic hoses and electrical cables along the boom for leaks, abrasions, or damage.

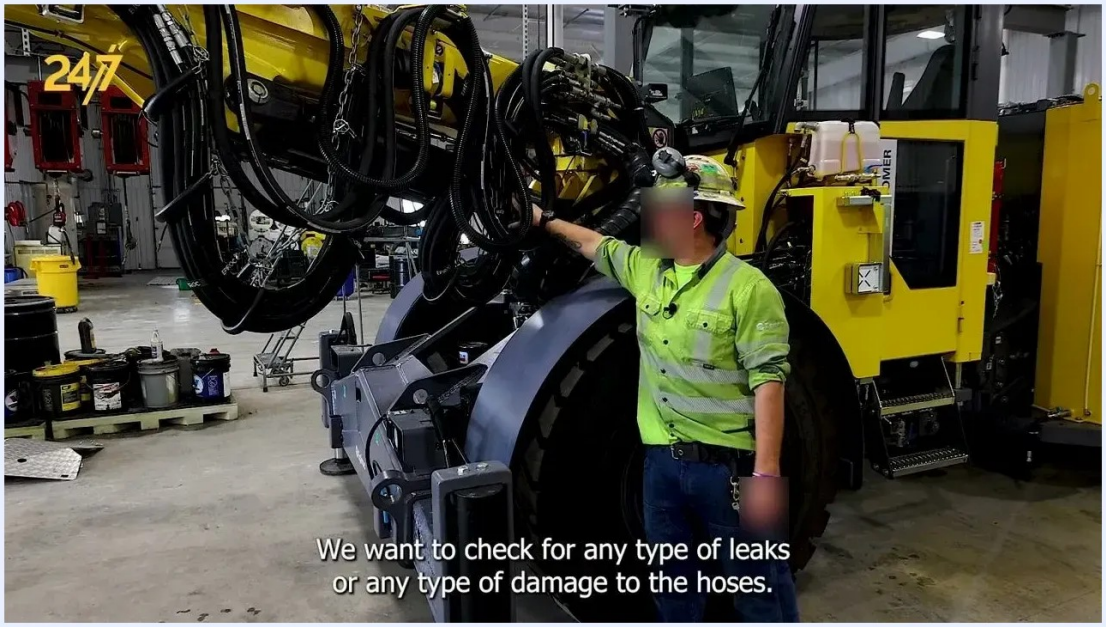
- [ ] Confirm all hoses are properly clamped and routed to prevent chafing.



Worker inspecting the boom feed hoses and cables, pointing to various lines

- [ ] Continue checking the boom hoses and cables for leaks, cracks, or other damage.
- [ ] Confirm all protective coverings and clamps are in place.

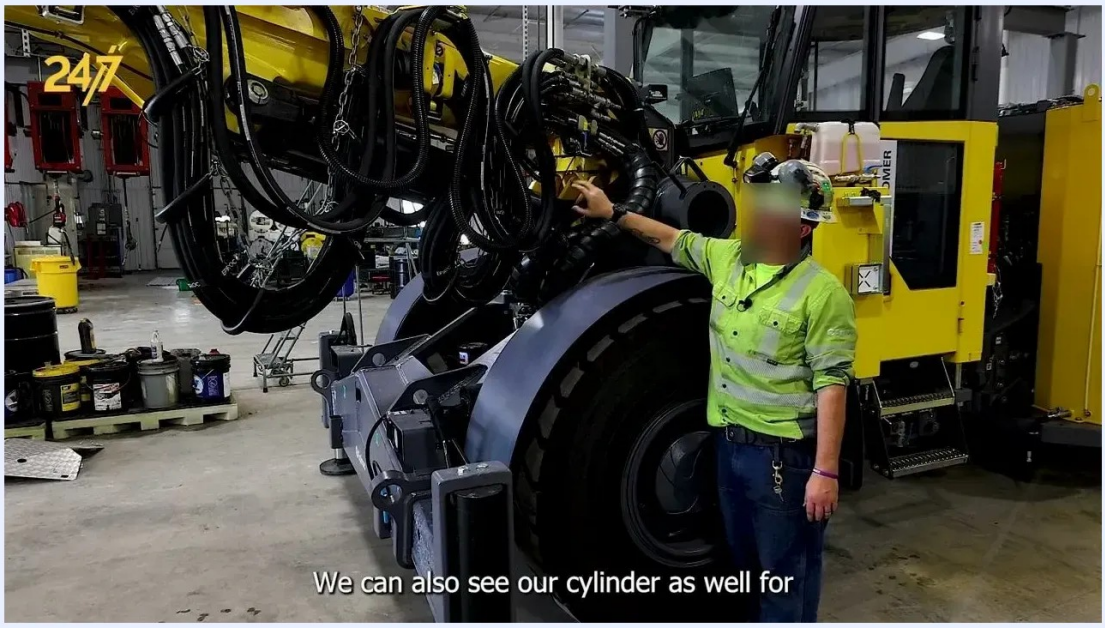
- [ ] Address any issues immediately to prevent equipment failure.



Worker closely checking boom hoses and cables for leaks or damage

- [ ] Find the hydraulic cylinder on the boom and inspect it for fluid leaks or damage.
- [ ] Find the inclinometer, a gray box near the boom base, and confirm it is securely attached and undamaged.

- [ ] Confirm all associated wiring and hoses are intact and properly routed.



Worker pointing to the boom cylinder and inclinometer to check for leaks and secure mounting

Check the drifter hoses and the hose bulkhead

- [ ] Check all hoses coming up over the hose drum for leaks, wear, or damage.
- [ ] Inspect the hose drum for proper routing and secure attachment.

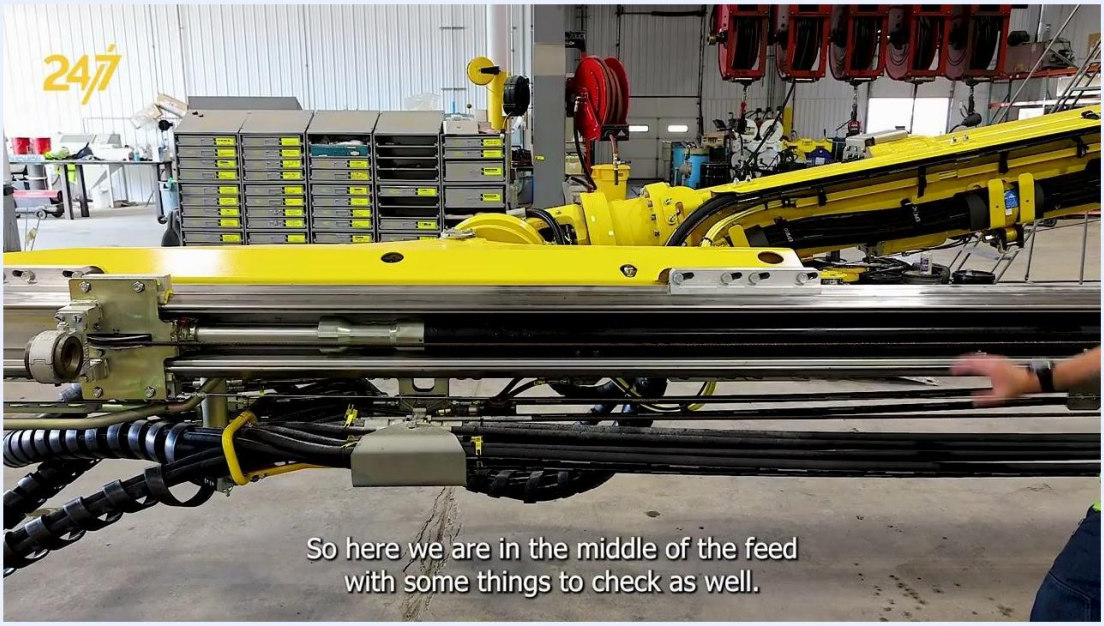
- [ ] Look for abrasions or weak spots on the hoses.



Technician pointing to the hoses and connections on the feed beam, highlighting the routing of hoses over the hose drum

- [ ] Move to the middle section of the feed beam.
- [ ] Inspect the hydraulic hose bulkhead for leaks, loose fittings, or damage.

- [ ] Confirm all hoses and cables are properly routed, secured, and free from abrasion.



Technician at the middle of the feed beam pointing to the hydraulic hose bulkhead and cable routing

- [ ] Inspect the oil-filled rotation unit seals and connections for leaks.
- [ ] Confirm all hydraulic connections are tight and the hoses are undamaged.

Electrical checks

These checks cover the cabinets, modules, battery, master switch, sensors, and wiring. The walkaround does not cover radios, cameras, or telemetry. Add those checks from your site's own procedure if they apply.

Remove the machine from service until you address any damaged, loose, or corroded electrical component.

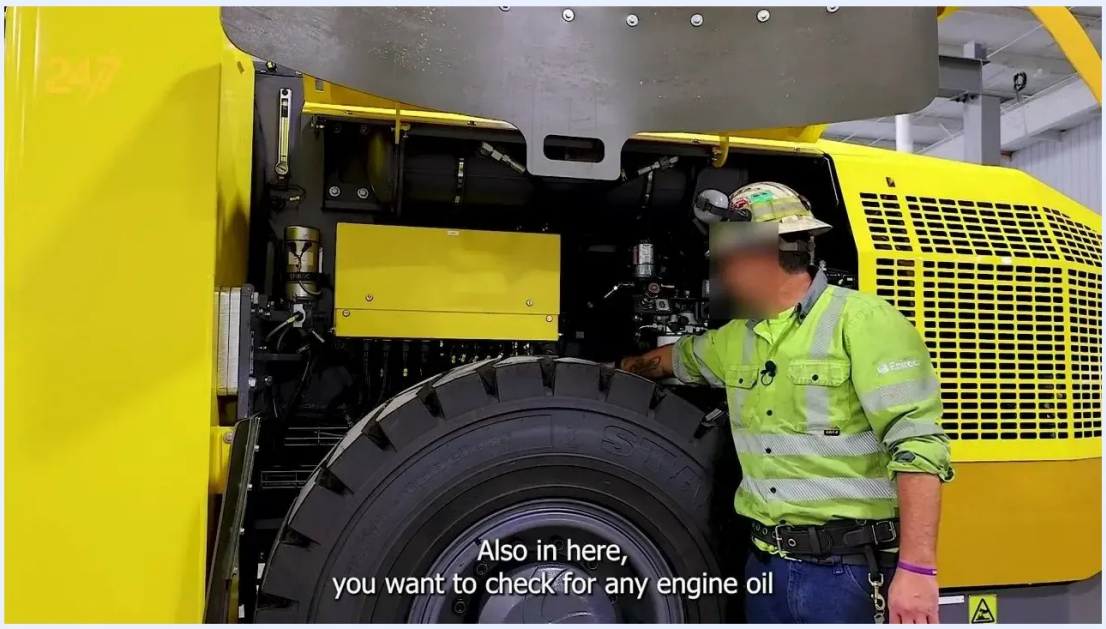
Check the A50 cabinet and IOM modules

- [ ] Find the A50 cabinet, a yellow box mounted above the left front tire, which houses the electrical components and fuses.



Operator indicating the yellow A50 electrical cabinet with visible fuses and wiring

- [ ] Find the IOM modules labeled D131 and D132.
- [ ] Confirm they are secure and undamaged.



Operator pointing to the IOM modules D131 and D132 inside the compartment

Check the battery compartment and master switch

- [ ] Open the battery compartment door at the rear of the machine.
- [ ] Confirm the master switch, which is housed in the battery compartment, is present and operational.
- [ ] If your inspection or maintenance requires it, tag out and lock out the master switch.



Operator at the rear of the machine pointing to the open battery compartment and master switch, with the Epiroc logo above

The battery compartment slides out for easier access.

- [ ] Slide out the compartment to reach the battery cables and terminals.
- [ ] Inspect the battery cables and terminals for corrosion.

- [ ] Slide the compartment back in and lock it in place.



Operator pointing to the master switch inside the extended battery compartment

Check the A52 panel and alternator

- [ ] Confirm the A52 panel, the yellow box above the rear tire, shows no visible damage.
- [ ] On the right side, find the alternator and alternator belt and confirm they are in proper condition.

Check the rotation unit sensors, motors, and wiring

- [ ] Find the sensors and motors that control the rotation units.
- [ ] Confirm all sensors are securely mounted and free from visible damage.

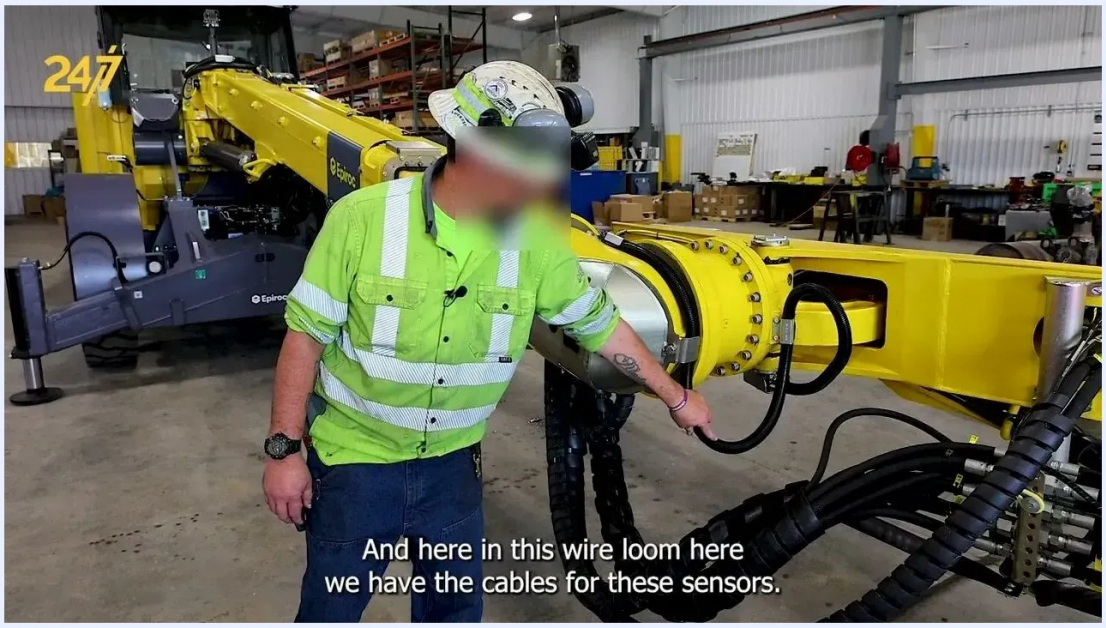
- [ ] Inspect the wiring and connectors for wear, abrasion, or loose connections.



Technician pointing to the sensors and motors on the rotation unit

- [ ] Find the wire loom that carries the cables for the rotation unit sensors.
- [ ] Confirm the loom is intact, properly routed, and not pinched or damaged.

- [ ] Confirm all cables are securely fastened and protected from abrasion or environmental hazards.



Technician pointing to the wire loom and sensor cables on the rotation unit



A technician in high-visibility safety gear stands beside a large yellow Epiroc Boomer machine inside a clean, well-lit workshop. The technician is facing the camera, and the machine’s cab, tires, and hydraulic components are visible. The screen displays the message: “And for more information, please contact your local Epiroc dealer.”

Check the drifter position cable

- [ ] Check the cable that determines the drifter's position on the feed.
- [ ] Confirm it is intact, free from fraying, and properly tensioned.
- [ ] Confirm it runs smoothly through its guides and is not obstructed.



Technician pointing to the position cable and its routing along the feed beam

Defects

Record every defect you find during the pre-shift walkaround on the underground drill rig. Report each one according to your facility's maintenance procedures. The walkaround does not define severity levels or equipment status categories, so use the terms from your site's maintenance system.

Defect	Severity	Action	Work order	Equipment status

Address any issues you found before you operate the machine. If a defect remains open, do not begin operating until it is resolved.

Signoff

Capture the release details once all items are checked and all defects are recorded.

Role	Name	Signature	Date and time
Operator			
Supervisor			
Maintenance release			

What's next

Once the walkaround is complete and you have signed off, you can operate the machine. Always document any issues you find and address them first.

For more information, technical support, or questions about inspection, maintenance, or operation, contact your local Epiroc dealer or service center. You can also refer to the official Epiroc documentation or reach out to authorized service personnel. Have your machine's model and serial number available when you contact support. Follow all safety protocols and manufacturer recommendations, and consult authorized professionals for complex issues or if you are unsure about any inspection or maintenance procedure.