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TM/RGM/RGM-96 Stone
टीएम/आरजीएम/आरजीएम 96 स्टोन

Date : …. 09.2024
दिनॉक : …. 09.2024

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II- मुख्य अभियन्ता (सी.पी.ओ.एच. कार्यशाला), अहमदाबाद — Chief Engineer (CPOH Workshop), Ahmedabad

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Detailed addresses are enclosed herewith.

विषय : रेल ग्राइंडिंग मशीन (आरजीएम-96 स्टोन) की अनुरक्षण अनुसूची पुस्तिका का संशोधन-02

Sub : Revision-02 of Maintenance Schedule Manual of Rail Grinding Machine (RGM-96 Stone)

संदर्भ : (i) मेसर्स वीआईपीएल का पत्र सं.2023-24/आरजीएम-आईआर96/आरडीएसओ/005/ दि. 15.02.24
(ii) इस कार्यालय का समसंख्यक पत्र दिनांक 15.05.2024.

Ref: (i) M/S VIPL letter No. 2023-24/ RGM-IR96/RDSO/005 dated 15.02.2024
(ii) This office letter of even no. dated 15.05.2024.

रेल ग्राइंडिंग मशीन (आरजीएम-96 स्टोन) के अनंतिम अनुरक्षण अनुसूची पुस्तिका को दिनांक 15.05.2024 के समसंख्यक पत्र द्वारा अंतिम रूप दिया गया तथा टिप्पणी/सुझाव लेने के लिए क्षेत्रीय रेलवे और फर्म को भेजा गया। कोई टिप्पणी प्राप्त नहीं हुई। आरजीएम-96 के लिए अनुरक्षण अनुसूची पुस्तिका को तदनुसार संशोधित किया गया है।

अब, रेल ग्राइंडिंग मशीन (आरजीएम 96-स्टोन) के संशोधित अनुरक्षण अनुसूची पुस्तिका को अंतिम रूप दिया गया है। इसकी एक प्रति आपकी जानकारी और क्षेत्र में काम करने वाले मशीन स्टाफ के मार्गदर्शन के लिए संलग्न है। हालाँकि, उपरोक्त सूची तैयार करते समय हर सावधानी बरती गई है, यदि कोई त्रुटि हो, तो उसे आगे सुधार के लिए ईमेल/पोस्ट द्वारा अधोहस्ताक्षरी की जानकारी में लाया जा सकता है।

Provisional Maintenance Schedule Manual of Rail Grinding Machine (RGM-96 Stone) was finalized vide letter of even no. dated 15.05.2024 and sent to Zonal Railways and firm for taking comments/suggestions. No comments received. Maintenance Schedule Manual for RGM-96 has been revised accordingly.

Now, revised maintenance schedule manual of Rail Grinding Machine (RGM 96-Stone) has been finalized. A copy of the same is enclosed herewith for your information and guidance of the machine staff working in the field. However, every care has been taken during preparation of the above said list, discrepancy noticed, if any, may be brought to the knowledge of the undersigned for further improvement, by email/post.

DA: As above

JAINENDR A KUMAR SINGH
Digitally signed by JAINENDRA KUMAR SINGH
Date: 2024.09.12 15:26:40 +05'30'

जैनेन्द्र कुमार सिंह
(Jainendra Kumar Singh)
Director / Track Machine-VI
(निदेशक / रेलपथ मशीन-VI)

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Government of India - Ministry of Railways

Research Designs and Standards Organisation

GOVERNMENT OFINDIA
MINISTRY OFRAILWAYS

Maintenance Schedule Manual of Rail Grinding Machine (RGM 96-Stone)

Report No. TM-272 (Rev-02)
September-2024

RESEARCH DESIGNS & STANDARDS ORGANISATION
LUCKNOW- 226 011

PREFACE

Maintenance of On-Track Machines is a challenging task. Maintenance of these machines is being done by Zonal Railways with the assistance of local trade available, Zonal Track Machine Workshops, CPOH/Prayagraj, Rayanapadu, Kanchrapara & Ahmedabad and RDSO/Lucknow. With experience over the years, the railway engineers have developed adequate expertise in the maintenance of these machines. However, in absence of approved maintenance instructions, different maintenance practices have come into vogue. Therefore, it has become imperative to have a uniform maintenance standard throughout the Indian Railways.

Maintenance schedule of Rail Grinding Machine (RGM 96-Stone) has been prepared and revised on the basis of maintenance instruction contained in OEM manual and Indian Railways Track Machine Manual 2019. The manual is prepared for those items which is required day to day maintenance. Apart from these instructions if any part of machine fails/breakdown that shall be attended immediately by the railway. The oiling and greasing shall be done of every moving part where as required in addition to manual depending on discretion of machine in charge. Some time machine modified/altered on the basis of experience or OEM suggestion that shall be also undertaken in the maintenance practice. If the Engine of machine is under AMC then instruction/maintenance schedule of repairing/alteration of Engine may be followed as per term and condition of this manual.

While every care has been taken to make the maintenance schedules quite exhaustive, there is always scope for further improvement. Suggestions from the railways in this regard will be welcome and may be sent to the undersigned for future improvement.

(Jainendra Kumar Singh)
Director/Track Machine-VI
RDSO/Lucknow-226011

September -2024

EXPLANATORY NOTES

While preparing Maintenance Schedule of Rail Grinding Machine 96-Stone (Rail Grinder RGI 96), the terms used and their meanings are explained below:-

CHECK : Ensure a specific condition does or does not exist.

INSPECT : Look for damage and defects including breakage, distortion, cracks, and corrosion and wear, check for leaks, security and that all items are completed.

CHANGE : For new or overhauled or reconditioned part in place of old parts and missing Parts.

OVERHAUL : Dismantle, examine, recondition or renew parts as necessary against given specifications, reassemble, inspect and test.

Maintenance Schedule of Rail Grinding Machine (RGM-96 Stone)

S.N.	Schedule	Periodicity	Duration	Location
1.	Schedule I	Daily	08 hrs.	Track Machine Siding
2.	Schedule II	50 Engine hrs.	10 hrs.	-do-
3.	Schedule III	250 Engine hrs.	12 hrs.	-do-
4.	Schedule IV	1000 Engine hrs.	2 days	-do-
5.	Schedule V	3000 Engine hrs.	4 days	RGM Siding
6.	Schedule VI	10000 Engine hrs.	20 days	In CPOH Workshop
7.	Schedule VII	20000 ERH or 60 months whichever is earlier.	1st POH - 60 days, 2nd POH -75 days	In CPOH Workshop

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SCHEDULE - I
(TO BE DONE DAILY)
DURATION: 08 HRS

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1.	Inspect the engine fan and alternator belts for Wear, Cracking, Flat spots, Stretching, Foreign contaminants on the belt, Tears, Abrasion, and Any missing ribs. Replace the main engine fan or alternator belt, if necessary.
1.2.	Visually check the fuel tank level gauge for any damage or possible failure.
1.3.	Check for fuel tank level sight gauge cracks, leakage, and clarity. Clean or replace as Needed.
1.4.	Check the main engine coolant level on the coolant sight gauge.
1.5.	Inspect the engine oil levels. Fill as necessary.
1.6.	Inspect the engine area for leaks, spills, fuel odors, loose components or damaged parts.
1.7.	Inspect Fire Detection System Inspection
1.8.	Walk around the machine and look for any abnormalities.
1.9.	Visually confirm that air filters are seated properly.
1.10.	Inspect the air intake piping from the filters to the engine for any damaged or loose connections.
2.	**HYDRAULIC SYSTEM**
2.1.	Check the fluid level in the hydraulic tank
2.2.	Inspect the hydraulic system
2.3.	Check & record maximum hydraulic oil temperature of the day during working
2.4.	Check the hydraulic system in the control car, engine room, GC1, GC2, GC3 and GC4 for wear and damage
2.5.	Look for hydraulic fluid leaks near the fittings, and tighten any loose connections.
2.6.	Inspect the hydraulic hoses for wear and damage.
2.7.	Check all cylinders for leaks and wear.
2.8.	Blow out Hydraulic oil cooler fins by compressed air
2.9.	Check & record Hydraulic oil pressure of the day's work.
3.	**MECHANICAL (Air System, Water System etc.)**
3.1	To remove the grind dust.
3.2	Inspect the grind car cab first-aid kit.
3.3	Grind Shift Maintenance.
3.4	Pre-departure Fitness-to-Run Checklist.
3.5	Inspect Rail Profile Measurement Mounting Cable Connections and Humidity Level.
4.	**PNEUMATIC: Air Compressor**
4.1	Check the air compressor oil level.
4.2	Inspect the air compressor for any air or oil leaks.
4.3	Inspect the air horn tank pressure regulator setting. The pressure should be 6.2

	bar (90 psi).
4.4	Automatic/independent brake test and Inspection
4.5	Visually inspect all the brake shoes on both sides of the bogie. Replace the brake shoes if any Worn, cracked, missing, or damaged.
4.6	Inspect the brake system on all cars with the automatic and independent brakes released to ensure that the brake cylinder is working properly.
4.7	To check the brake pipe.
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.1	Check all lamp lenses and reflectors for damage. Replace if necessary.
5.2	Check charging of batteries and its voltage.
5.3	Visual check for cable connection between GC to GC, FCC to GC, GC to water wagon & CC2 and CC1.
5.4	Check Hot Rail Warning Lights and Siren.
5.5	Traction motor- Inspection hoses/cables and check tighten, replace if require.
6.	**BOGIE AND UNDERFRAME**
6.1	Clean off any dirt or oil mixed deposits not removed by the air wand.
6.2	Check that all accessible parts of the bogie frame, traction motors, and brake components are clean and free of damage or defects
6.3	Visually inspect the bogie frame, bolster, and supporting structure for any visible damage, cracks, and deformity.
6.4	Visually inspect the connections to the frame or coach body for damage, cracks, loose bolt connections, cables and hoses, and side bearer pad thickness.
6.5	Ensure all coil springs are not broken.
6.6	Inspect all hose couplers for any damage.
6.7	Inspect the under frame of the machine for loose, detached, corroded or damaged parts for the following areas: I. Brake and running gear. II. Bogie frame, springs, and bolster (including bolster mountings). III. Body-to-bogie bond connections. IV. Body-to-bogie flexible hoses. Check for kinked hoses. V. Couplers. VI. Hook and buffer welded joints. VII. Stone storage box mountings. VIII. Under frame tanks and mountings. IX. Diesel generator mountings. X. Grind buggies and mountings. XI. Cab mounting pads and bolts.
6.8	Inspect the grooved tread, if one is visible.
6.9	Inspect the wheel tread for flat spots.
7.	**GRIND System**
7.1	Clean and inspect the grease fittings for wear or damage. Replace any damaged or worn fittings as necessary
7.2	Inspect the motor top mounting bolts for tightness, damage, and wear. Replace

	any loose mounting bolts or tighten as necessary. The motor mounting bolts secure the grind motor to the grind module top/bottom plates.
7.3	Inspect the grind motor grease fitting for leaks or breakage safety wires. Replace if necessary.
7.4	Locate and inspect the derail pedal pins on the front/rear/left/ right of the buggy.
7.5	Visually inspect the buggy up rotary limit switches.
7.6	Inspect the grind motor bearings (Free Spin).
7.7	Look for buggy hydraulic fluid leaks near the fittings and tighten any loose connections as necessary
7.8	Inspect the buggy hoses for blistering, brittleness, cracks, or any fraying to the fire-sleeve.
7.9	Check the tank temperature and sight glass.
7.10	Check the hydraulic fluid level: • Green—OK to run. • Orange—OK to run and fill after shift. • Red—Stop and fill immediately.
7.11	Tighten any fittings that are leaking. If the leak persists, replace the O-ring.
7.12	Replace damage/ broken stones if any.
8.	**DUST COLLECTION SYSTEM**
8.1.	Check Filter purging operation.
8.2.	Check Dust auguring after closing the work
8.3.	Check dust blower (fan) switch (ON/ OFF) & inspect complete dust collection system in each grind car
9.	**FIRE SUPPRESSION SYSTEM (WATER SYSTEM)**
9.1.	Check water level of water tank & reserve tank
9.2.	Check Water pump and Motors of FCC, grind Car and water wagon.
9.3.	Check tie spray and ditch spray.
9.4.	Check water leakage.

SCHEDULE - II
(TO BE DONE 50 ERH)
DURATION: 10 Hours
(TO BE DONE IN ADDITION TO SCHEDULE-I)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	Examine all Gen Set Frame Mounting fasteners for any wear, damage, or loosening.
1.2	Check dust indicators (35hrs.) & clean primary air filters of engine and generator.
1.3	Inspect elbows and ducting.
2.	**MECHANICAL (Air System, Water System etc.)**
2.1	Visually inspect the drawbars for wear, damage on structures and/or paint. Replace any worn drawbars as necessary.
2.2	Clean FCC Operator's cabin, Air compressor compartment, Traction system electrical lockers.
3.	**HYDRAULICSYSTEM**
3.1	Inspect all buggy hydraulic hoses.
3.2	Provide the missing clamps.
4.	**PNEUMATIC. Air Compressor -** Sullivan-Palatek UD-50
4.1	Inspect the air system hoses, Replace components if necessary.
4.2	Inspect the air compressor for any air or oil leaks.
4.3	Replace the air compressor oil filter.
4.4	Inspect the main motor and fan electrical connections.
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.1	Examine each emergency light on the machine for proper function.
5.2	Repair or replace any emergency light or timer that is found to be defective or otherwise damaged.
5.3	Traction Motor Inspection and Cleaning.
6.	**BOGIE AND UNDERFRAME**
6.1.	Check brake shoes for wear/damage & replace if required.
7.	**GRIND SYSTEM**
7.1.	Grease Module Vertical Slide Tubes and tilting pivot pin.
7.2.	Calibrate the Grind Module Tilt Angle.
7.3.	Lubricate limit switches and cylinder pins.
7.4.	Adjust external spark containment blankets.
8.	**FIRE SUPPRESSION SYSTEM (WATER SYSTEM)**
8.1.	Clean the Water Strainer, Tie Sprays, and Ditch Sprays.
8.2.	Clean Water Pump Strainer Basket.
8.3.	Check Water pump & Strainer.

SCHEDULE - III
(TO BE DONE 250 ERH)
DURATION: 12 HOURS
(TO BE DONE IN ADDITION TO SCHEDULE-I &II)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	Inspect engine and generator mounting bolts for visual signs of loosening or damage.
1.2	Inspect the condition of the flexible wire-way conduit between the generator and the electrical enclosure.
1.3	Inspect exhaust piping for damage, loose connections, and missing or broken clamps.
1.4	Inspect all exhaust insulation blankets for damage or excessive wear.
1.5	Inspect the pulleys. The grooves should have no sharp edges or chips.
1.6	Inspect the engine and generator platforms for any indication of fluid leakage.
1.7	Inspect all the Fuel hose and pipe connections for leaks. If defects are found, shut down and lockout the affected engine. Drain the fuel tank, if necessary, to make repairs.
1.8	Inspect the radiator fins, fans, and motors for debris or any signs of damage. Check for cracks, loose rivets, and bent or loose fan blades. Ensure the fan is tightly secure.
1.9	Replace Fuel filter and Fuel separator and water filters with engine Oil.
1.10	To remove and replace the engine fuel/water separator filters.
2.	**HYDRAULICSYSTEM**
2.1	Inspect all hoses for kinks, twists, or rubbing. Look for signs of leakage that may indicate a loose fitting.
2.2	Check the hydraulic fluid level in the tank using the sight glass. Fill as necessary.
2.3	Inspect the sight glass for cracks.
2.4	Inspect for signs of leaks.
2.5	Check the hydraulic pump discharge pressures. • Low pressure: 34.47 bar (500 psi) • High pressure: 138 bar (2,000 psi)
2.6	Check gauges and filter restriction indicators on the hydraulic filter Assemblies. • Red = Requires Action • Yellow = Report to Supervisor or Crew Chief • Green = Requires No Action
3.	**PNEUMATIC. Air Compressor -** Sullivan-Palatek UD-50
3.1	Air brake pipe leak test
3.2	Air brake supply reservoir and air brake cylinder test
3.3	Air main reservoir leak test
4.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
4.1	Visually inspect all electrical wiring and components for indications of heat damage or loose connections.

	Inspect/Lubricate cables for wear.
4.3	Inspect inside the lockers for cleanliness. Clean as necessary.
4.4	Inspect for visible wire harness damage, crushed electrical conduits, missing flashing that causes rubbing or pinch points, or bare wires.
4.5	Note the location and identification numbers of any damaged components.
4.6	Inspect each bond connection using the ohmmeter by testing the continuity between each connecting metal surface.
4.7	Replace any damaged or missing bonds/braids/straps as necessary.
4.8	Inspect and close the enclosure.
4.9	Shut down all engines and start the stopwatch or timing device.
4.10	Check that the pressurization blowers are working and there are no unusual noises.
4.11	Inspect all lights and note any damage or malfunctions.
4.12	Replace any defective lamps, outlets, and switches.
4.13	To remove and replace the pressurization air filter. (If required)
4.14	Traction Cooler Cleaning.
4.15	Traction Cooler Reservoir Fluid Check and Fill.
5.	**BOGIE AND UNDERFRAME**
5.1	Inspect the wheel for signs of spalling or shelling which has metal expelled from the tread.
5.2	Inspect the wheel for signs of tread buildup.
5.3	Check all fasteners for tightness around the entire cooler and both fan guards. Replace any missing fasteners.
5.4	Re-tighten any loose fasteners and replace any damage fasteners.
5.5	Replace any cables and hoses with rub marks larger than 1 centimeter (0.40 in.).
6.	**GRIND SYSTEM**
6.1	Inspect the dust hopper and blower motor areas for any accumulation of grind dust.
6.2	Inspect dust system welds for cracks or breaks.
6.3	Check that the ducting is properly bolted/clamped and mounting brackets and dampeners are in good condition.
6.4	Inspect for excessive vibration while the dust blower motors are running.
6.5	Inspect filter doors for proper sealing. (Clean Filters every Month)
6.6	To grease the grind motor. (180 Grind hour or 6 Months)
6.7	Grind Module Tilt Calibration.
	TO BE DONE AFTER 500 HOURS OF ENGINE RUNNING (In addition to above)
1.	**ENGINE & GENERATOR**
1.1	Replace all primary & Secondary air filters of engine, write installation date on filter and record in maintenance log. (Secondary in 3 months and Primary in 6 Months)
1.2	Replace all primary & Secondary air filters of Generator, write installation date on filter and record in maintenance log. (750 hrs of Engine running).

[illegible]	Grease Generator Bearing.(Every six Months)
2.	**AIR COMPRESSOR**
2.1	Inspect the air compressor air filter.
2.2	Replace air filters 1000 comp Hrs.
3.	**MACHINE**
3.1	Grease articulated joints and draw bars.
3.2	Inspect wheel flange.
4.	**MECHANICAL (Air System, Water System etc.)**
4.1	Grease water pump motors .(Every six Months)
5.	**DUST COLLECTION SYSTEM**
5.1	Grease anti-friction bearings .(Every six Months)
	Camp Car 50 KVA:(To Be Done 600 ERH or 12 Months whichever is earlier) Duration: 8 Hrs.
1.	**GENSET ENGINE** (CPCB-II H4 series) – Camp Car.
1.1	Replace the FF CUM WATER SEPERATOR BS IL ENG.
1.2	Replace the LUBE FILTER / SPIN ON OL FILTER 40K.

SCHEDULE – IV
(TO BE DONE 1000 ERH)
DURATION: 02 DAYS
(TO BE DONE IN ADDITION TO SCHEDULE- I, II AND III)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	Main Engine Coolant Filters Replacement.
1.2	Engine E-stop Inspection.
1.3	Machine E-stop Inspection.
1.4	Check / Change worn out water hoses on condition basis.
1.5	Check / Change bearings and shaft of radiator fan drive on condition basis.
1.6	Check RPM of engine radiator fan.
	GENSET ENGINE (CPCB-II H4 series) – Camp Car.
1.7	Replace the primary element as soon as vacuum indicator shows “RED”.
1.8	Replace the air cleaner whenever vacuum indicator shows red or 1000 hrs. whichever is earlier.
1.9	Replace the secondary element at the time of every third replacement of the primary filter element or after 2 Years of duration whichever is earlier. – 2000 Hrs
2.	**MECHANICAL (Air System, Water System etc.)**
2.1	Water Pump Strainer Inspection.
2.2	Water Tank Strainer Inspection.
3.	**HYDRAULICSYSTEM**
3.1	Hydraulic Accumulator Inspection and Charge.
3.2	Hydraulic Motor Lubrication. (Grease motor every six Month)
3.3	Hydraulic Reservoir Sensor Inspection.
4.	**PNEUMATIC. Air Compressor -** Sullivan-Palatek UD-50.
4.5	Replace compressor lubricant filter
4.6	Inspect compressor filter, fan and pulley.
4.7	Replace coalescing filter.
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.4	Replace primary and secondary air filters. Write installation date on filter and record in maintenance log.
6.	**BOGIE AND UNDERFRAME**
6.1	Draft Gear Inspection.
6.2	Drawbar Inspection and Maintenance.
7.	**GRIND SYSTEM**
7.1	Grind Module Limited Motion Testing.
7.2	Grind Module Tilt Cylinder Feedback Test.
8.	**DUST COLLECTION SYSTEM**
8.1	Replace Dust flame retardant. (if required).
8.2	Replace auger gearbox oil.

SCHEDULE – V
(TO BE DONE 3000 ERH)
DURATION: 04 DAYS
(TO BE DONE IN ADDITION TO SCHEDULE- I, II, III AND IV)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	To clean the engine cooling system.
1.2	To remove and replace the generator air filter assembly.
1.3	Main Engine Coolant Test.
1.4	Main Generator Insulation Test.
1.5	Inspect all mounting brackets for cracks or damaged bolt holes.
2.	**MECHANICAL (Air System, Water System etc.)**
2.1	To clean the dust fan wheel and housing.
2.2	Dust Collector Purge Solenoid Test.
2.3	Clean the dust housing baffle, inlet plenum, and frame interior.
2.4	To remove and replace the RPMS desiccant plugs. (Typically 1000+ hours depending on environment humidity).
2.5	Speedometer Calibration Test.
2.6	Check Water pumps and motors and repair if required.
2.7	To clean a ditch sprayer.
2.8	To inspect the hose reel.
2.9	To test the tie sprayer nozzles.
2.10	To remove and clean/replace a faulty tie spray nozzle.
2.11	To calibrate the encoder.
3.	**HYDRAULICSYSTEM**
3.1	Hydraulic Fluid Sampling and Testing.
3.2	Hydraulic Power Unit Pressure Filter Replacement.
3.3	Hydraulic System Breather Filter Inspection and Replacement.
3.4	Hydraulic System Return Filter Replacement.
4.	**PNEUMATIC: Air Compressor -** Sullivan-Palatek UD-50.
4.1	Inspect and clean the air compressor cooler.
4.2	Air Intake filter replacement.
4.3	Check expiry date of Fire Extinguisher.
4.4	Air brake pipe leak test.
4.5	Air brake supply reservoir and air brake cylinder test.
4.6	Air main reservoir leak test.
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.1	To remove and replace the pressurization air filter.
5.2	Traction Motor Gear Lubrication.
5.3	Traction Motors blower filter (replace Primary and secondary).
5.4	Traction Enclosure Maintenance
6.	**BOGIE AND UNDERFRAME**
6.1	Grease the bearings at each end of the dust augers.
7.	**GRIND SYSTEM**
7.1	To grease the grind motor.
7.2	Replace any hoses, if needed.

7.3	Brake Electrical Circuit Testing.
7.4	Dust collector filter replacement.
7.5	Grind Motor Idle AMP Calibration.
8.	**DUST COLLECTION SYSTEM**
8.1	Grease dust blower (fan) motor and shaft.

SCHEDULE – VI
(TO BE DONE 10000 ERH)
DURATION: 20 DAYS
IOH OF THE MACHINE
(TO BE DONE IN ADDITION TO SCHEDULE- I, II, III, IV AND V)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	Main Generator Lubrication
1.2	Overhaul the injectors. (If required)
1.3	Check the RPM of Engine radiator fan, if found less than the rated RPM, take corrective measures.
1.4	Checks cooling system. It must be clean to work correctly and to eliminate buildup of harmful chemicals.
2.	**MECHANICAL (Air System, Water System etc.)**
3.	**HYDRAULIC SYSTEM**
3.1	Replace all hydraulic hoses.
3.2	Flush the complete system.
4.	**PNEUMATIC. Air Compressor -** Sullivan-Palatek UD-50
4.1	Replace the air separator elements.
4.2	Replace the compressor desiccant dryer cartridges. (Once in Year)
4.3	Replace the compressor desiccant dryer purge valves. (Once in Year)
4.4	Replace the inlet check valve (Once in Year)
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.1	Change batteries on condition basis.
5.2	Traction Enclosure Maintenance - 3,000 Hours
6.	**BOGIE AND UNDERFRAME**
6.1	Complete inspection of the undercarriage including all wheels, axles and bogies.
6.2	Turning of wheels/ replacement of wheels as per requirement based on local inspection of the equipment
7.	**GRIND SYSTEM**
7.1	Replacement of Grind Buggy wheels.
7.2	Replace hoses of all module and Grind Buggy. (On condition base)
7.3	Replace all lower module pivot bushings.

SCHEDULE – VII
(TO BE DONE 20000 ERH OR 60 Months whichever is earlier)
DURATION: 1st POH- 60 Days & 2nd POH- 75 Days
(TO BE DONE IN ADDITION TO SCHEDULE- I, II, III, IV, V AND VI)

1.	**ENGINE** (Cummins QST30 G5 NR2, 900KW, 480VAC/60 Hz)
1.1	Overhaul or replace the engine.
1.2	Overhaul the fuel injection pump.
1.3	Change engine mounting pads.
1.4	Change water hoses.
1.5	Change engine air cleaner elements.
1.6	Change all engine filters along with lube oil
1.7	Clean the diesel tank.
1.8	Checks for coolant leaks.
1.9	Test function of thermostat.
1.10	Check the thermostat for wear or damage. If the barrel of the thermostat is worout or fretted, it must be discarded.
1.11	Check water pump, replace it if required.
1.12	Inspect turbo charger function. (Look for damaged or cracked compressor or turbine blades)
1.13	Check the vibration damper for evidence of fluid loss, dents and wobbles etc.
2.	**MECHANICAL (Air System, Water System etc.)**
2.1	Replace water separator and air oiler. Condition basis.
2.2	Change all pneumatic hoses.
2.3	Change all pneumatic valves.
2.4	Overhaul/ Change all pneumatic cylinders on condition basis.
2.5	Change brake cylinders on condition basis.
2.6	Change all the brake shoes.
2.7	Replace cooling coil.
2.8	Replace air unloader.
2.9	Clean and test air tanks.
2.10	Clean out rust, corrosion and de-scale from water tanks and plumbing circuit.
2.11	Replace/ overhaul water pump and motors.
2.12	Change water hoses.
2.13	Overhaul/ service of optical Rail Profile Measuring system/ KLD.
3.	**HYDRAULIC SYSTEM**
3.1	Change all Hydraulic pumps and motors on need basis ii. iii. iv. v. vi. vii.
3.2	Replace/overhaul all Hydraulic cylinders on condition basis
3.3	Clean the Hydraulic tank, inside to be painted with approved quality of paint.
3.4	Fill new oil after replacing return line and suction filters
3.5	Clean Hydraulic oil cooler. If it is blocked more than 20% during service or badly Leaking, then replace it.

3.6	Change filter elements on condition basis.
3.7	Change all ‘O’ rings and oil seals.
4.	**PNEUMATIC. Air Compressor -** Sullivan-Palatek UD-50
4.1	Change the compressor lubricant
5.	**ELECTRICAL (System Equipment wiring and Traction motor control)**
5.1	Traction Enclosure Maintenance - 6,000 Hours
5.2	Traction Enclosure Maintenance - 12,000 Hours
5.3	Replace or repair the defective PCBs. Condition basis.
5.4	Replace the limit switches. Condition basis
5.5	Overhaul the panel boxes.
5.6	Defective switches and indicative lights may be replaced.
5.7	Check the LED of all the solenoids & replace if required
5.8	Check the calibration of digital potentiometers and replace the defective ones.
5.9	Reconditioning/ replace batteries.
5.10	Complete inspection of the traction system and traction motor / replace if needed.
6.	**BOGIE AND UNDERFRAME**
6.1	Bogie Inspection − 6 Year (Ganz).
7.	**GRIND SYSTEM**
7.1	Replace buggy wheels including bearings and shaft.
7.2	Replace all module guide tube/rod.
7.3	Check complete buggy frame and repair/ strengthen as required.
7.4	Replace all bearings and bushes of tilt cylinders and module.
7.5	Calibrate all modules.
7.6	Overhaul / Replace the buggies, wheels & feeler rollers

Annexure-I

List of Safety Equipments

Sr.No.	Description	Quantity
1.	Red hand signal flags	2 Nos.
2.	Green hand signal flags	1 No.
3.	Tri- colour hand signal lamps/LED torch	2 Nos.
4.	Chain With Padlock	2 Nos.
5.	Fire Extinguisher	One per cabin
6.	Hooter (Manually Controlled)	2 Nos.
7.	Jack 50 t* Traverse type	2 Nos.
8.	Wooden Blocks	4 Nos.
9.	Crow bars	4 Nos.
10.	Hydraulic hand pump	1 No.
11.	Emergency Pneumatic / Hydraulic hose off size suiting to different machines (complete with end fitting)	As per requirement
12.	Wire rope with close loops at both ends 2 meters and 9 meters long one of each length.	As per requirement
13.	Machine Specific Equipment if any.	As per requirement
14.	Fog signals (detonators) in a tin case.	10 Nos.
15.	A copy of working time table of this section where the machine is working.	1 No.
16.	G & SR book with up to date amendment Slips.	1 No.
17.	4 cells flasher light LED lamp cum flasher light (rechargeable)	1 No.
18.	Banner flags	2 Nos.
19.	First aid Box	1 No.
20.	Skids	2 Nos.
21.	Safety Helmet	All machine staff
22.	Protection clothing , safety shoes and safety gloves	All machine staff
23.	Walkie talkie with frequency of SM, guard and loco pilots	2 Nos.
24.	Internal communication system walkie talkie and /or head mounting system	-
25.	Track machine manual with up to date correction slip	1 No.
26.	Accident manual	1 No.
27.	Tail Lamp	1 No.

*List of jacks sent to Railway Bd. vide Letter No.TM/HM/1,Vol-II dated 22.08.2019 for approval which is awaited.

GENERAL SAFETY NOTES

1. The machine has to be operated according to existing Indian Railways Rules & Regulations.

2. The safety of yourself and other people is most important consideration in the operation and maintenance of the machine.

3. Remember, the machine is a working unit, carrying delicate instruments. Therefore, the machine should not be driven at excessive speed over bad track or crossing.

4. Always keep your eyes open for other men working close to the machine.

5. Do not forget to look out for signals, switches and track obstructions.

6. Make sure that all protection equipment and safety devices are in place on the machine and in working order especially when it is being driven from site to site.

7. Always keep the machine clean. Excessive oil or grease on the machine can cause you to slip and fall and is also to potential fire hazard.

8. Always lock the machine before you leave. Make sure that the machine is protected in accordance with railway regulations.

9. Whenever you have the opportunity while waiting to get out on a job, do some of the smaller maintenance job, such as tightening loose nuts and bolts and cleaning the machine.

10. Do not permit unauthorized persons to operate the machine.

11. It is prohibited to use fire on or near the machine.

12. Whenever going for working on or near the tamping bank area, operate the emergency push button and ensure latching position.

13. Do not tow the machine if the final drive is engaged.

ACKNOWLEDGEMENT

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RDSO

1	SHRI	KAMAL CHAND	ARE/TM/RGM
2	SHRI	PRINCE KUMAR	SSE/TM/RGM
3	SHRI	SURENDRA KUMAR	SSRE/TM/RGM
4	SHRI	NEERAJ SINGH	JRE/TM/RGM

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