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टीएम/एच एम/यूनि,पार्ट- III  
TM/HM/UNI,Pt- III

दिनांक- -11-2020  
Date- -11-2020

|  |  |
|--|--|
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**विषय :** पी.सी.टी.(जी.मैक) मशीन सं. सी डी सी के-16-III) की अनुरक्षण अनुसूची पुस्तिका।

**Sub:** Maintenance Schedule Manual of PCT (GEMAC) M/C No.CDCK-16-III.

ओईएम मैनुअल के आधार पर पी.सी.टी.(जी.मैक) मशीन सं. सी डी सी के-16-III की अनुरक्षण अनुसूची का मसौदा तैयार कर टीएम/एच एम/यूनि,पार्ट- III दि. 31.07.2020 द्वारा जारी किया गया था और अनंतिम अनुरक्षण अनुसूची पुस्तिका पत्र सं. टीएम/एच एम/यूनि,पार्ट-III दि. 23.09.2020 द्वारा 15 दिनों के लिये सभी क्षेत्रीय रेलवे को, जारी किया गया था। परन्तु क्षेत्रीय रेलवे से अभी तक कोई टिप्पणी प्राप्त नहीं हुई है। अब अनुरक्षण अनुसूची को अंतिम रूप से तैयार किया गया है, जिसकी एक प्रति आपके सूचनार्थ तथा सभी मशीन के कर्मचारियों जो फील्ड में काम कर रहे हैं, के मार्गदर्शन हेतु संलग्न है। यद्यपि उपरोक्त सूची बनाते समय सभी सावधानियाँ बरती गई हैं, फिर भी यदि कोई त्रुटि हो तो कृपया अपने सुझावों/टिप्पणियों को सुधार हेतु ई-मेल/फैक्स/ पत्राचार द्वारा अद्योहस्ताक्षरी को भेजे।

Based on OEM manual, Draft of Maintenance Schedule Manual of PCT (GEMAC) M/C No. CDCK-16-III had been prepared and circulated vide letter no. TM/HM/UNI,Pt III dated 31/07/2020 for 30 days and provisional Maintenance Schedule Manual circulated vide letter no.TM/HM/UNI,pt.III dated 23/09/2020 for 15 days respectively. But no suggestions/comments are received from Zonal Railways. Now the maintenance Schedule Manual 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, the discrepancy noticed, if any, may be brought to the knowledge of the undersigned for further improvement by email/fax/post

DA: As above

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**Signed by Om Prakash**

**Date: 27-11-2020 16:14:27**

**Reason: Approved**

(ओमप्रकाश)  
(Om Prakash)

निदेशक रेलपथ मशीन-III

Director Track Machine-III

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**Principal, IRTMTC, Pipal Gaon, Allahabad-211011**



**MAINTENANCE SCHEDULE MANUAL**  
**FOR**  
**Points & Crossing Tamping Machine (GMAC)**  
**(CDCK-16 III)**

**REPORT NO. TM-243**

**NOVEMBER-2020**

***TRACK MACHINE AND MONITORING DIRECTORATE***  
***RESEARCH DESIGN AND STANDARD ORGANISATION***  
***LUCKNOW-226011***

## 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, CPOHs 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.

This Maintenance Schedule manual for (PCT GMAC) Machine No. CDCK-16-III). has been prepared on the basis of Maintenance instruction given by OEM. Suggestions/instructions given by OEM from time to time to be also followed in addition to instructions given in this manual.

While every care has been taken in preparing the maintenance schedule manual 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.

November-2020

( OM PRAKASH )  
Director/Track Machine-III  
RDSO/Lucknow

## EXPLANATORY NOTES

While preparing text of schedules for maintenance of PCT (GMAC), 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, corrosion and wear, check for leaks, security and that all items are completed.
- CHANGE** - Fit 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 for PCT (GMAC) )(CDCK-16-III).

| S.N. | Schedule     | Periodicity                     | Duration                            | Location                              |
|------|--------------|---------------------------------|-------------------------------------|---------------------------------------|
| 1.   | Schedule I   | Daily/ Before working & running | One hour.                           | In Track Machine Siding               |
| 2.   | Schedule II  | 50 Engine hrs.                  | Two hrs.                            | -do-                                  |
| 3.   | Schedule III | 100 Engine hrs.                 | One day                             | -do-                                  |
| 4.   | Schedule IV  | 200 Engine hrs.                 | Two days                            | -do-                                  |
| 5.   | Schedule V   | 1000 Engine hrs.                | 7 days                              | In Satellite Depot/<br>Zonal Workshop |
| 6.   | Schedule VI  | 2000 Engine hrs.                | 21 days                             | In Zonal Workshop                     |
| 7.   | Schedule VII | 8000/6000 Engine hrs.           | 1st POH-60 days,<br>2nd POH-75 days | In CPOH Workshop                      |

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| PCT (GMAC) |  |                |                     |                        |                       |                       |                       | ENGINE                           |
|------------|--|----------------|---------------------|------------------------|-----------------------|-----------------------|-----------------------|----------------------------------|
| SR. NO.    | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>1.</b>  | <b>Engine Caterpillar C15</b>  |                |                     |                        |                       |                       |                       |                                  |
| 1.1        | Check coolant level in radiator and top up if required.  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.2        | Check the engine oil level and top up if required.   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.3        | Check fuel level and top up if required.   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.4        | Visual check the air cleaner chocking indicator. If indicator is red, the outer filter is to be cleaned. | ✓              | ✓                   | ✓                      | ✓                     | X                     | X                     | X                                |
| 1.5        | Check the leakage from hoses, water pump seal etc. and do the needful.                                   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.6        | Visual Check the leakage from fuel pump, injectors, fuel supply and return pipes and do needful.         | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.7        | Visual check the tension and condition of V-belts and do needful.  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.8        | Clean the engine and premises.   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.9        | Check the engine oil pressure at idle  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.10       | Check engine oil pressure on load after two hours working.   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.11       | Check the oil level and leakage of compressor, if applicable   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.12       | Check the battery charging system.   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.13       | Drain the Reservoir after the day's work.  | ✓              | ✓                   | X                      | X                     | X                     | X                     | X                                |
| 1.14       | Record the maximum engine temperature of the day's work  | ✓              | ✓                   | X                      | X                     | X                     | X                     | X                                |
| 1.15       | Drain sediments from fuel tank.  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | X                     | X                                |
| 1.16       | Open and clean dust collector/pan,   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.17       | Lubricate the radiator fan shaft with grease.  | X              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.18       | Check the leakage from fuel line.  | X              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |

| PCT (GMAC)                          |  |                |                      |                        | ENGINE                |                       |                       |                                  |
|-------------------------------------|--|----------------|----------------------|------------------------|-----------------------|-----------------------|-----------------------|----------------------------------|
| SR.NO.                              | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS. | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS | SCH.VII<br>8000/<br>6000<br>HRS. |
| 1.19                                | Check injector pipes for any rubbing and do needful.                                       | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.20                                | Drain water separator  | X              | ✓                    | ✓                      | ✓                     | ✓                     | X                     | X                                |
| 1.21                                | Check electrolyte level of batteries, top up if required.                                  | X              | ✓                    | ✓                      | ✓                     | ✓                     | X                     | X                                |
| 1.22                                | Check battery terminal and connection for tightness.                                       | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.23                                | Apply petroleum jelly on battery terminal.   | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.24                                | Top up air oiler if required.  | X              | ✓                    | ✓                      | ✓                     | ✓                     | X                     | X                                |
| 1.25                                | Check engine temperature safety device.  | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.26                                | Check lube oil pressure safety device.   | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.27                                | Examine the mounting bolts of the engine.  | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.28                                | First time change of lube oil is being done , 50 hrs after commissioning.                  | X              | ✓                    | X                      | X                     | X                     | X                     | X                                |
| 1.29                                | First time change of lube oil filter and by pass filter is being done after commissioning. | X              | ✓                    | X                      | X                     | X                     | X                     | X                                |
| 1.30                                | Change engine lube oil.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.31                                | Replace lube oil filter & bypass element.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.32                                | Replace Primary fuel filters (water separator)   | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.33                                | Replace fuel filters.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.34                                | Inspect the water separator for proper functioning.  | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.35                                | Check the throttle control linkages.   | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.36                                | Check fuel tank breather and clean if required.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.37                                | Check/add Coolant additive concentrate   | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.38                                | Clean/change crank case air breather.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.39                                | Check air piping.  | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.40                                | Check hyd. Governor oil.   | X              | X                    | ✓*                     | X                     | ✓                     | ✓                     | ✓                                |
| 1.41                                | Lubricate all the engine pulley bearings with grease                                       | X              | X                    | x                      | ✓                     | ✓                     | ✓                     | ✓                                |
| 1.42                                | Check and change radiator hoses, if required   | X              | X                    | x                      | ✓                     | ✓                     | ✓                     | ✓                                |
| * Done after every 500 Engine hours |  |                |                      |                        |                       |                       |                       |                                  |



| PCT (GMAC) |  |                |                      |                        | ENGINE                |                       |                        |                                   |
|------------|--|----------------|----------------------|------------------------|-----------------------|-----------------------|------------------------|-----------------------------------|
| SR. NO.    | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS. | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS.. |
| 1.43       | Clean outer air cleaner element.( Cleaned after every 200 hrs or on dirt indication) | X              | X                    | X                      | ✓                     | X                     | X                      | X                                 |
| 1.44       | Check specific gravity of battery electrolyte if applicable.                         | X              | X                    | X                      | ✓                     | ✓                     | ✓                      | ✓                                 |
| 1.45       | Overhaul the air compressor. if required.  | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.46       | Clean the engine radiator externally.  | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.47       | Clean the diesel tank with lint free cloth.  | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.48       | Clean the cooling coil.  | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.49       | Replace the outer and inner engine air cleaner element.                              | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.50       | Replace minor repair kit for air compressor.   | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.51       | Decaling cooling system.   | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.52       | Change coolant of radiator   | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.53       | Check fuel pump calibration  | X              | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                 |
| 1.54       | Clean turbocharger compressor wheel and diffuser if required.                        | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.55       | Check turbocharger bearing clearance   | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.56       | Replace the batteries on condition basis.  | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.57       | Replace the rocker cover gaskets   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.58       | Adjust injectors and valve   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.59       | Change all the water hoses.  | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.60       | Overhaul the water separator and air oiler.  | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.61       | Overhaul the air unloader.   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.62       | Check crank shaft end clearance.   | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.63       | Check the vibration damper for dynamic balance.                                      | X              | X                    | X                      | X                     | X                     | ✓                      | ✓                                 |
| 1.64       | Overhaul self starter.   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |
| 1.65       | Overhaul alternators   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                 |

| PCT (GMAC) |   | ENGINE         |                      |                        |                       |                       |                        |                                  |
|------------|---|----------------|----------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.    | ITEM  | SCH.I<br>Daily | SCH.II<br>50<br>HRS. | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 1.66       | Clean and calibrate injectors if required.  | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.67       | Overhaul the engine, if there is lack of compression on low lube oil pressure otherwise de- carbonize the engine. | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.68       | Check bearing and shaft of radiator fan drive and do needful.   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.69       | Overhaul water pump.  | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.70       | Check turbocharger compressor and turbine wheels. Check radial and end clearances & do needful.                   | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.71       | Tighten manifold nuts or cap screws.  | X              | X                    | X                      | X                     | X                     | ✓                      | X                                |
| 1.72       | Overhaul or replace the engine.   | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.73       | Overhaul the radiator fan drive assembly.   | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.74       | Change the engine mounting pads.  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.75       | Replace Silencer (Muffler)  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.76       | Replace Set of Hoses with clamp for Radiator  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.77       | Replace self starter  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.78       | Replace alternator  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.79       | Replace batteries   | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.80       | Change the water separator and air oiler  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.81       | Replace the air unloader on condition basis.  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| 1.82       | Check cooling coil. replace if required otherwise clean it.   | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |

| PCT (GMAC)                          |  | Power Transmission and TDCN-22-1861 hydro-mechanical transmission gear box |                      |                        |                       |                       |                        |                                  |
|-------------------------------------|--|--|----------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.                             | ITEM   | SCH.I<br>Daily   | SCH.II<br>50<br>HRS. | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>2.</b>                           | <b>Power Transmission and ZF TDCN-22-1861 hydro-mechanical transmission gear box</b>                           |  |                      |                        |                       |                       |                        |                                  |
| 2.1                                 | Check Transmission gear box pressure at idle and rated at 2100 RPM.  | ✓  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.2                                 | Check the oil leakage from all gear boxes and do the needful.  | ✓  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.3                                 | Grease torque arm pivots of driving bogie.   | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.4                                 | Grease link rods.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.5                                 | Adjust the clearance of all brake shoes.   | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.6                                 | Check brake linkage and oil the pivots.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.7                                 | Grease king pin pivot of driving & idle bogies.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.8                                 | Grease axle gear box flange cover of driving bogie.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.9                                 | Check oil level of power shift gear box.   | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.10                                | Check oil level of all gear boxes & top up if required.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.11                                | Check oil level of Transmission gear box gear box (at 1000 rpm), and top up after stopping engine if required. | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.12                                | Grease hand brake gear.  | X  | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.13                                | Grease all cordon shafts.  | X  | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 2.14                                | Change oil of axle gear boxes.   | X  | X                    | ✓*                     | X                     | ✓                     | ✓                      | ✓                                |
| 2.15                                | Change oil of distribution gear box.   | X  | X                    | ✓*                     | X                     | ✓                     | ✓                      | ✓                                |
| 2.16                                | Change gear oil of hydraulic drive reduction gear box.   | X  | X                    | ✓*                     | X                     | ✓                     | ✓                      | ✓                                |
| 2.17                                | Change Transmission gear box filter.   | X  | X                    | ✓*                     | X                     | ✓                     | ✓                      | ✓                                |
| 2.18                                | Check meggy/rubber springs and replace, if required.   | X  | X                    | X                      | X                     | ✓                     | ✓                      | ✓                                |
| * Done after every 500 Engine hours |  |  |                      |                        |                       |                       |                        |                                  |

| PCT (GMAC)                          |   |                | TAMPING UNIT         |                        |                       |                       |                        |                                  |
|-------------------------------------|---|----------------|----------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.                             | ITEM  | SCH.I<br>Daily | SCH.II<br>50<br>HRS. | SCH.II<br>1100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 3.                                  | <b>TAMPING UNIT</b>   |                |                      |                        |                       |                       |                        |                                  |
| 3.1                                 | Clean the tamping banks.  | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.2                                 | Check & fill the reservoir for lubrication of tamping arm bearing (55 mm pin) up to the mark.                             | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.3                                 | Check working of centralized lubrication unit if used   | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.4                                 | Check & fill the reservoir for lubrication of vibration shaft bearings up to the mark.                                    | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.5                                 | Grease guide columns.   | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.6                                 | Greasing of connecting rod bearing (35mm pin) and vibration shaft bearing is to be done after every 2-3 hours of working. | ✓              | ✓                    | X                      | X                     | X                     | X                      | X                                |
| 3.7                                 | Check tightness of tamping tools  | ✓              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.8                                 | Check tightness of shoe plate bolts of guide Column   | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.9                                 | Check squeezing cylinder cover plate bolts for tightness (LHS).   | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.10                                | Check tamping unit cylinder holding bracket bolts for Tightness.  | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.11                                | Check tamping unit locking device.  | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.12                                | Check the nuts of,55 mm and 35 mm pin for tightness.  | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.13                                | Check tamping unit locking device.  | X              | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.14                                | Check calibration of tamping unit depth.  | X              | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 3.15                                | Change oil of Vibration shaft main bearing.   | X              | X                    | ✓*                     | X                     | ✓                     | ✓                      | ✓                                |
| 3.16                                | Overhaul/replace tamping unit, if required.   | X              | X                    | X                      | X                     | ✓                     | ✓                      | X                                |
| 3.17                                | Replace tamping unit  | X              | X                    | X                      | X                     | X                     | X                      | ✓                                |
| * Done after every 500 Engine hours |   |                |                      |                        |                       |                       |                        |                                  |

| PCT (GMAC)   |  | TRACK LIFTING & LINING UNIT |                      |                        |                       |                       |                        |                                  |
|--|--|-----------------------------|----------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.  | ITEM   | SCH.I<br>Daily              | SCH.II<br>50<br>HRS. | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 4.   | <b>TRACK LIFTING &amp; LINING UNIT</b>   |                             |                      |                        |                       |                       |                        |                                  |
| 4.1  | Check locking device of lifting and lining unit..                                | ✓                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.2  | Lubricate the clamp carrier pivots with oil.                                     | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.3  | Inspect clamp roller locking bracket bolts for tightness.                        | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.4  | Examine the clamp roller for wear and free movement and do the needful.          | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.5  | lubricate lining cylinder pivots.  | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.6  | Grease lifting unit guide columns.   | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.7  | Grease roller clamp housing.   | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.8  | lubricate locking device pivots.   | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.9  | Lubricate the track lifting cylinder pivots with lube oil.                       | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.10   | lubricate rail clamp pivot pins.   | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.11   | Check and lubricate all moving part of lifting and lining unit.                  | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.12   | Check gap between chord wire and carrier of lining transducer and do needful.    | X                           | ✓                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.13   | Check feeler rollers of middle trolley for play.                                 | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.14   | Check clearance of lifting roller disc below the rail head in lowered condition. | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.15   | Check guide rod of transducers for bends and tightness of bolts.                 | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.16   | Check nuts & bolts of measuring devices for tightness.                           | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.17   | Check calibration of lining.   | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.18   | Check calibration of leveling.   | X                           | X                    | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.19   | Check bearing play and clamp bolt and change if necessary.                       | X                           | X                    | X                      | ✓                     | ✓                     | ✓                      | ✓                                |
| Note : All movable parts other than not mentioned in this schedule to be lubricated with grease/ oil |  |                             |                      |                        |                       |                       |                        |                                  |

| PCT (GMAC) |   | TRACK LIFTING & LINING UNIT |                     |                        |                       |                       |                        |                                  |
|------------|---|-----------------------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.    | ITEM  | SCH.I<br>Daily              | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 4.20       | Grease pendulum bridge pivots.                              | X                           | X                   | X                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.21       | Check height transducer carrier rod, for wear or damage.    | X                           | X                   | X                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.22       | Check transducer fittings for measuring and lining trolleys | X                           | X                   | X                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 4.23       | Check wires of all transducers and do needful.              | X                           | X                   | X                      | X                     | ✓                     | ✓                      | ✓                                |
| 4.24       | Calibrate the sensing equipments.                           | X                           | X                   | X                      | X                     | ✓                     | ✓                      | ✓                                |
| 4.25       | Overhaul/ replace the lifting unit, if required.            | X                           | X                   | X                      | X                     | X                     | ✓                      | X                                |
| 4.26       | Replace the lifting unit                                    | X                           | X                   | X                      | X                     | X                     | X                      | ✓                                |

| PCT (GMAC)   |  |                |                     |                       | HYDRAULIC             |                       |                        |                                  |
|--|--|----------------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.  | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>5. Hydraulic</b>  |  |                |                     |                       |                       |                       |                        |                                  |
| 5.1  | Check and top up hydraulic oil tank.                                     | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 5.2  | Record the maximum temperature of hydraulic fluid during the day's work. | ✓              | ✓                   | X                     | X                     | X                     | X                      | X                                |
| 5.3  | Check the leakage from hydraulic hoses and do needful.                   | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 5.4  | Change high pressure filter element.                                     | X              | ✓*                  | X                     | X                     | ✓                     | ✓                      | ✓                                |
| 5.5  | Change return line filter element ,or if hydraulic oil changed           | X              | X                   | ✓**                   | X                     | ✓                     | ✓                      | ✓                                |
| 5.6  | Change suction filters.  | X              | X                   | ✓**                   | X                     | ✓                     | ✓                      | ✓                                |
| 5.7  | Check all pressure controls for rated settings.                          | X              | X                   | X                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 5.8  | Clean hydraulic oil through 10 micron porta filter.                      | X              | X                   | X                     | X                     | ✓                     | ✓                      | ✓                                |
| 5.9  | Send sample of hydraulic oil for physical & chemical test.               | X              | X                   | X                     | X                     | ✓                     | ✓                      | X                                |
| 5.10   | Change hydraulic oil if found unserviceable after cleaning tank.         | X              | X                   | X                     | X                     | ✓                     | ✓                      | X                                |
| 5.11   | Clean and check hydraulic oil tank breather, replace if required.        | X              | X                   | X                     | X                     | ✓                     | ✓                      | ✓                                |
| 5.12   | Replace the hydraulic hoses which are damaged by External abrasion.      | X              | X                   | X                     | X                     | ✓                     | ✓                      | X                                |
| 5.13   | Check the hydraulic motors for proper function and do the needful.       | X              | X                   | X                     | X                     | X                     | ✓                      | X                                |
| 5.14   | Provide the missing clamps.  | X              | X                   | X                     | X                     | X                     | ✓                      | X                                |
| 5.15   | Check the D.C. valves for leakage and do needful.                        | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| * To be done after every 250 engine hours** To be done after every 500 engine hours. |  |                |                     |                       |                       |                       |                        |                                  |

| PCT (GMAC) |  | HYDRAULIC      |                     |                       |                       |                       |                        |                                  |
|------------|--|----------------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.    | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 5.16       | Replace T/unit up/dn cylinder  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.17       | Replace axle support cylinder  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.18       | Replace Hook cylinder  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.19       | Replace Hook In/out cylinder   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.20       | Replace Rail clamp cylinder  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.21       | Change all hydraulic pumps and motors.   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.22       | Overhaul/Replace all hydraulic cylinders.                                      | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.23       | Clean the hydraulic tank, inside to be painted with approved quality of paint. | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.24       | Clean hydraulic oil cooler.  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.25       | Check the hydraulic accumulators and recharge, if required                     | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.26       | Replace all hydraulic hoses.   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.27       | Change all the direct acting and pilot operated D.C. valves.                   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.28       | Proportional valves and servo valves may be calibrated/replaced.               | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.29       | Change all the pressure control valves.  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.30       | Replace all the stop cocks and flow control valves.                            | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.31       | Replace all pressure gauges  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 5.32       | Flush the complete system.   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |



| PCT (GMAC)         |  |                |                     |                       | PNEUMATIC             |                       |                        |                                  |
|--------------------|--|----------------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR.<br>NO.         | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>6.Pneumatic</b> |  |                |                     |                       |                       |                       |                        |                                  |
| 6.1                | Check air brake pressure.  | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 6.2                | Check pneumatic system for any air leakage.                      | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 6.3                | Check brake lining and brake block play.                         | X              | X                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 6.4                | Check air unloader for proper functioning.                       | X              | X                   | X                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 6.5                | Change of air drier filter cartridge, if applicable.             | X              | X                   | X                     | X                     | ✓                     | X                      | X                                |
| 6.6                | Replace Pn Regulator   | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 6.7                | Replace Pn horn  | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 6.8                | Clean the air reservoir.   | X              | X                   | X                     | X                     | X                     | ✓                      | ✓                                |
| 6.9                | Change Brake Cylinder seal                                       | X              | X                   | X                     | X                     | X                     | ✓                      | ✓                                |
| 6.10               | Change pneumatic pipes leading to brake cylinders.               | X              | X                   | X                     | X                     | X                     | ✓                      | X                                |
| 6.11               | Overhaul all pneumatic valves and change the unserviceable ones. | X              | X                   | X                     | X                     | X                     | ✓                      | X                                |
| 6.12               | Check/Change the seals of all pneumatic cylinders.               | X              | X                   | X                     | X                     | X                     | ✓                      | ✓                                |
| 6.13               | Change all pneumatic hoses.                                      | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 6.14               | Change all pneumatic valves.                                     | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |
| 6.15               | Change pneumatic cylinders on need basis..                       | X              | X                   | X                     | X                     | X                     | X                      | ✓                                |

| PCT (GMAC)                                |  |             |              |                 | MECHANICAL      |                 |                  |                         |
|---|--|-------------|--------------|-----------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.                                   | ITEM   | SCH.I Daily | SCH.II 50HRS | SCH.III 100 HRS | SCH.IV 200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| <b>7. Mechanical</b>                      |  |             |              |                 |                 |                 |                  |                         |
| 7.1                                       | Grease all lining roller pins.                           | ✓           | ✓            | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 7.2                                       | Apply lube oil on bush bearing.                          | ✓           | ✓            | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 7.3                                       | Check leveling cord tensioning arrangement.              | X           | ✓            | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 7.4                                       | Check foundation bolts of brake cylinders.               | X           | ✓            | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 7.5                                       | Grease all brake linkages.                               | X           | X            | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 7.6                                       | Check the condition of brake shoes, replace if required. | X           | X            | ✓               | ✓               | ✓               | ✓                | X                       |
| 7.7                                       | Grease hand brake gear.                                  | X           | X            | X               | ✓               | ✓               | ✓                | ✓                       |
| 7.8                                       | Check shock absorbers and do needful.                    | X           | X            | X               | X               | ✓               | ✓                | ✓                       |
| 7.9                                       | Check bearings of trolley wheel and grease them.         | X           | X            | X               | X               | ✓               | ✓                | ✓                       |
| 7.10                                      | Change the brake shoes.                                  | X           | X            | X               | X               | ✓               | ✓                | ✓                       |
| 7.11                                      | Replace the missing and defective hand tools.            | X           | X            | X               | X               | X               | ✓                | ✓                       |
| 7.12                                      | Strengthen machine frame where cracks have developed.    | X           | X            | X               | X               | X               | ✓                | ✓                       |
| 7.13                                      | Check the wheels for tyre defects, reprofile or replace. | X           | X            | X               | X               | X               | ✓                | ✓                       |
| * To be done after every 500 engine hours |  |             |              |                 |                 |                 |                  |                         |

| PCT (GMAC) |   | MECHANICAL  |               |                 |                 |                 |                  |                         |
|------------|---|-------------|---------------|-----------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.    | ITEM  | SCH.I Daily | SCH.II 50 HRS | SCH.II 100 HRS. | SCH.I V200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| 7.14       | Do patch painting where paint has peeled off or blistered and where welding work has been done. | X           | X             | X               | X               | X               | ✓                | X                       |
| 7.15       | Overhaul the trolleys, wheels & feeler rollers.   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.16       | Check the axle bearings and grease them.  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.17       | Overhaul all the gear boxes except Transmission gear box.                                       | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.18       | Check/Replace all the bearings and grease them  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.19       | Replace Meggie Flexible Washer  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.20       | Replace Meggie/rubber spring  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.21       | Replace Hook  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.22       | Replace Hook bush   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.23       | Replace Rail clamp disc   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.24       | Replace Brake shoes   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.25       | Replace Joint head  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.26       | Replace Slide plate   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.27       | Replace the shaft holding nuts & bolts.   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.28       | Complete machine may be painted with approved paint.  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.29       | Check the bogie coil springs and replace, if broken.  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.30       | Check the pivot, replace if required.   | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.31       | Remove and check the bogie frame and do needful.  | X           | X             | X               | X               | X               | X                | ✓                       |
| 7.32       | Change Axle support cylinders.  | X           | X             | X               | X               | X               | X                | ✓                       |

| PCT (GMAC)           |  |             |              | ELECTRICAL       |                 |                 |                  |                         |
|----------------------|--|-------------|--------------|------------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.              | ITEM   | SCH.I Daily | SCH.II 50HRS | SCH.III 100 HRS. | SCH.IV 200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| <b>8. Electrical</b> |  |             |              |                  |                 |                 |                  |                         |
| 8.1                  | Clean the depth transducers for free movement of chord wire carrier. | X           | ✓            | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 8.2                  | Check function of horns  | ✓           | ✓            | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 8.3                  | Clean alternator and check connections.                              | X           | ✓            | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 8.4                  | Check all limit switches/Proximity switches and do needful.          | X           | X            | ✓                | ✓               | ✓               | ✓                | X                       |
| 8.5                  | Calibrate driving circuit.   | X           | X            | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 8.6                  | Checking of gauges and display.                                      | X           | X            | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 8.7                  | Check all lights and do needful.                                     | X           | X            | X                | X               | X               | ✓                | ✓                       |
| 8.8                  | Replacement of Relay/Fuse if required .                              | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.9                  | Replace defective switches and potentiometers.                       | X           | X            | X                | X               | X               | ✓                | ✓                       |
| 8.10                 | Repair or replace the defective PCBs.                                | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.11                 | Replace defective indicative instruments.                            | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.12                 | Overhaul the pendulums.  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.13                 | Replace Intercom mike  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.14                 | Replace Intercom speaker   | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.15                 | Replace Depth transducer   | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.16                 | Replace Lining transducer  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.17                 | Replace all Limit switches/Proximity switch /Lock / unlock sensors   | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.18                 | Replace all working lights   | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.19                 | Replace all head lights  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.20                 | Replace all tail lights  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.21                 | Replace Electric horn  | X           | X            | X                | X               | X               | X                | ✓                       |
| 8.22                 | Replace all cabin lights   | X           | X            | X                | X               | X               | X                | ✓                       |

| PCT (GMAC) |  | ELECTRICAL     |                     |                        |                       |                       |                        |                                  |
|------------|--|----------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.    | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| 8.23       | Clean the depth transducers for free movement of chord wire carrier. | X              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | X                                |
| 8.24       | Check function of horns  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 8.25       | Clean alternator and check connections.                              | X              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 8.26       | Check all limit switches/Proximity switches and do needful.          | X              | X                   | ✓                      | ✓                     | ✓                     | ✓                      | X                                |
| 8.27       | Calibrate driving circuit.   | X              | X                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 8.28       | Checking of gauges and display.                                      | X              | X                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 8.29       | Check all lights and do needful.                                     | X              | X                   | X                      | X                     | X                     | ✓                      | ✓                                |
| 8.30       | Replacement of Relay/Fuse if required .                              | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.31       | Replace defective switches and potentiometers.                       | X              | X                   | X                      | X                     | X                     | ✓                      | ✓                                |
| 8.32       | Repair or replace the defective PCBs.                                | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.33       | Replace defective indicative instruments.                            | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.34       | Overhaul the pendulums.  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.35       | Replace Intercom mike  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.36       | Replace Intercom speaker   | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.37       | Replace Depth transducer   | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.38       | Replace Lining transducer  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.39       | Replace all Limit switches/Proximity switch/Lock/unlock sensors      | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.40       | Replace all working lights   | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.41       | Replace all head lights  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.42       | Replace all tail lights  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.43       | Replace Electric horn  | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |
| 8.44       | Replace all cabin lights   | X              | X                   | X                      | X                     | X                     | X                      | ✓                                |

| PCT (CRCC)                        |  |                |                     |                       |                       |                       | UNDERFRAME             |                                  |
|-----------------------------------|--|----------------|---------------------|-----------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.                           | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>10.1</b>                       | <b>Underframe</b>  |                |                     |                       |                       |                       |                        |                                  |
| 10.1.1                            | Visually examine center pivot mounting bolts and attend if needed.                               | ✓              | ✓                   | ✓                     | ✓                     | X                     | X                      | X                                |
| 10.1.2                            | Check condition of head stock/sole bar.  | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.1.3                            | Examine trough floor, turn under and other frame members from underneath for corrosion.          | X              | ✓*                  | X                     | X                     | ✓                     | ✓                      | ✓                                |
| 10.1.4                            | Visually inspect center pivot cover  | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.1.5                            | Visually examine and attend safety loops of bolster.   | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.1.6                            | Thoroughly examine the centre pivot mounting bolts and replace, if needed.                       | X              | X                   | X                     | X                     | ✓                     | ✓                      | ✓                                |
| <b>10.2</b>                       | <b>Brake rigging &amp; Brake System</b>  |                |                     |                       |                       |                       |                        |                                  |
| 10.2.1                            | Check and attend brake shoe head and key & replace if necessary.                                 | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.2                            | Visually inspect brake hangers, brake gear pins and cotters/split pins and replace if necessary. | ✓              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.3                            | Visually examine brake beams breakages/damages.  | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.4                            | Check brake gear and adjust so that the piston stroke is within the limit.                       | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.5                            | Visually inspect damaged/missing brake gear bushes, lever hanger pins replace if necessary.      | X              | X                   | X                     | X                     | ✓                     | ✓                      | ✓                                |
| 10.2.6                            | Examine and attend brake levers.   | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.7                            | Visually inspect for damage on brake pipe, replace if required                                   | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.8                            | Check and attend brake beam safety wire rope / safety straps.                                    | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.2.9                            | Visually check for hand brake chain rope, sprocket & floating lever and attend if needed.        | X              | ✓                   | ✓                     | ✓                     | ✓                     | ✓                      | ✓                                |
| * To be done after every 250 hrs. |  |                |                     |                       |                       |                       |                        |                                  |

| PCT (CRCC)   |  |             |               |                 |                 | UNDERFRAME      |                  |                         |
|--|--|-------------|---------------|-----------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.  | ITEM   | SCH.I Daily | SCH.II 50 HRS | SCH.III 100 HRS | SCH.IV 200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| 10.2.10  | Check of MU washer and attend if needed.   | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.2.11  | Check for cutoff angle cock and leakage, attend if needed.                                       | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.2.12  | Check and attend brake block adjuster.   | X           | ✓*            | X               | X               | ✓               | ✓                | ✓                       |
| 10.2.13  | Check/Replace all types Torque arm plates, pins & bushes.  | X           | X             | X               | X               | X               | ✓                | ✓                       |
| 10.2.14  | Check/Replace all Maggie flex washer, Maggie/Rubber springs/ Damper rubber.                      | X           | X             | X               | X               | X               | ✓                | ✓                       |
| 10.2.15  | Replace all brake reversal springs.  | X           | X             | X               | X               | X               | ✓                | ✓                       |
| 10.2.16  | Repair/Replace all brake drum seals, cylinders & brake linkage rods.                             | X           | X             | X               | X               | X               | ✓                | ✓                       |
| <b>10.3 Bogie Frame &amp; Suspension</b>                           |  |             |               |                 |                 |                 |                  |                         |
| 10.3.1   | Visually examine the condition of bogie frame and welded locations.                              | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.3.2   | Examine bolster safety straps/loops for damage / broken suspension system /missing               | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.3.3   | Visually examine the condition of suspension system (Coil spring) for any damage/loose/breakage. | X           | ✓*            | X               | X               | ✓               | ✓                | ✓                       |
| 10.3.4   | Examine condition of the wearing plates.   | X           | X             | ✓**             | X               | ✓               | ✓                | ✓                       |
| 10.3.5   | Examine corrosion of sole bar and other under frame members with torchlight or inspection lamp.  | X           | X             | ✓**             | X               | ✓               | ✓                | ✓                       |
| 10.3.6   | Visually examine the cabin and axle support cylinders for leakages/damages.                      | X           | X             | ✓**             | X               | ✓               | ✓                | ✓                       |
| <b>10.4 Draw Gear</b>  |  |             |               |                 |                 |                 |                  |                         |
| 10.4.1   | Examine draw hook, draw bars, rubber pads for damages.   | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.4.2   | Examine visually draft key locking pins.   | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| 10.4.3   | Check and replace damage/missing split pins.   | X           | ✓             | ✓               | ✓               | ✓               | ✓                | ✓                       |
| * To be done after every 250 hrs ** To be done after every 500 hrs |  |             |               |                 |                 |                 |                  |                         |

| PCT (CRCC)               |   |             |               |                  | UNDERFRAME      |                 |                  |                         |
|--------------------------|---|-------------|---------------|------------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.                  | ITEM  | SCH.I Daily | SCH.II 50 HRS | SCH.III 100 HRS. | SCH.IV 200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| 10.4.4                   | Check condition of the CBC coupling and its components and replace as required  | X           | ✓             | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 10.4.5                   | Check condition of draw beam and locating pins on it.   | X           | X             | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 10.4.6                   | Ensure that wear on screw coupling shackle pins, trunion pins, shackle/link holes and draw hook holes should not exceed 3 mm.         | X           | X             | ✓**              | X               | ✓               | ✓                | ✓                       |
| 10.4.7                   | Remove the scale, rust, work hardened layers and surface cracks if any, by light grinding/filing                                      | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.4.8                   | Use dye-penetrant test for checking surface cracks in case of doubts  | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.4.9                   | Inspect the draw hook for deformations & cracks. The neck, its pin hole, and the slot are vulnerable locations                        | X           | X             | X                | X               | X               | ✓                | ✓                       |
| <b>10.5 Buffing Gear</b> |   |             |               |                  |                 |                 |                  |                         |
| 10.5.1                   | Visually examine buffer plungers for damages/ drooping /stroke length.  | ✓           | ✓             | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 10.5.2                   | Examine buffer mounting bolts and attend if necessary.  | ✓           | ✓             | ✓                | ✓               | ✓               | ✓                | ✓                       |
| 10.5.3                   | Ensure the length is within 584-635 mm  | X           | X             | ✓***             | X               | ✓               | ✓                | ✓                       |
| 10.5.4                   | Inspect buffer plunger false plate for wear and profile.  | X           | X             | ✓***             | X               | ✓               | ✓                | ✓                       |
| 10.5.5                   | Check the draw bar for dimensional distortions and damaged threads.   | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.5.6                   | Check the castle nuts for damaged threads, worn nut faces visually. Replace castle nuts if needed.                                    | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.5.7                   | Test all draw bars by magna-glow equipment for surface cracks.  | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.5.8                   | Load test draw bar (Stc. 60.61) at 39.5 t and those of (IS 5517 Gr. 35Mn6Mo3) at 60t. There should not be any permanent deformations. | X           | X             | X                | X               | X               | ✓                | ✓                       |
| 10.5.9                   | Examine visually buffer casing for cracks/damages & height.   | ✓           | ✓             | ✓                | ✓               | ✓               | ✓                | ✓                       |
| ***to be done at 500 hrs |   |             |               |                  |                 |                 |                  |                         |



| PCT (CRCC)                          |  |                |                     |                        |                       |                       | UNDERFRAME             |                                  |
|-------------------------------------|--|----------------|---------------------|------------------------|-----------------------|-----------------------|------------------------|----------------------------------|
| SR. NO.                             | ITEM   | SCH.I<br>Daily | SCH.II<br>50<br>HRS | SCH.III<br>100<br>HRS. | SCH.IV<br>200<br>HRS. | SCH.V<br>1000<br>HRS. | SCH.VI<br>2000<br>HRS. | SCH.VII<br>8000/<br>6000<br>HRS. |
| <b>10.6 Running Gear and Wheels</b> |  |                |                     |                        |                       |                       |                        |                                  |
| 10.6.1                              | Examine visually axle box for grease oozing out, warm box if any   | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.6.2                              | Visually inspect axle box covers.  | ✓              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.6.3                              | Inspect wheel tread for shattered rim, spread rim, shelled tread, thermal cracks, heat checks  | X              | ✓                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.6.4                              | Visually examine wheel tyre profile and thickness of tyre and check with tyre profile gauge if they appear to be near condemning limit | X              | X                   | ✓                      | ✓                     | ✓                     | ✓                      | ✓                                |
| 10.6.5                              | Check with wheel distance gauge for loose or tight wheels.   | X              | X                   | ✓**                    | X                     | ✓                     | ✓                      | ✓                                |
| 10.6.6                              | Repair/replace all wheels, axles bearing housings and bearings.  | X              | X                   | X                      | X                     | X                     | ✓                      | ✓                                |
| 10.6.7                              | Fill all axle bearing housing with grease.   | X              | X                   | X                      | X                     | ✓                     | ✓                      | ✓                                |
| 10.6.8                              | Repair/replace all gear boxes, seals & driving shaft assemblies.   | X              | X                   | X                      | X                     | X                     | ✓                      | ✓                                |
| **to be done at 500 hrs             |  |                |                     |                        |                       |                       |                        |                                  |

| PCT (GMAC)         |   |             |               |                  | GENERAL         |                 |                  |                         |
|--------------------|---|-------------|---------------|------------------|-----------------|-----------------|------------------|-------------------------|
| SR. NO.            | ITEM  | SCH.I Daily | SCH.II 50 HRS | SCH.III 100 HRS. | SCH.IV 200 HRS. | SCH.V 1000 HRS. | SCH.VI 2000 HRS. | SCH.VII 8000/ 6000 HRS. |
| <b>11. General</b> |   |             |               |                  |                 |                 |                  |                         |
| 11.1               | Check for any unusual sound from tamping units, gear boxes, engine & hydraulic pumps.   | ✓           | X             | X                | X               | X               | X                | X                       |
| 11.2               | Check all the functions of machine before block working.  | ✓           | X             | X                | X               | X               | X                | X                       |
| 11.3               | Check all spares & tools for emergency as per Annexure - I.   | ✓           | X             | X                | X               | X               | X                | X                       |
| 11.4               | Change Cabin flooring/matting   | X           | X             | X                | X               | X               | X                | ✓                       |
| 11.5               | Change Cabin Interior   | X           | X             | X                | X               | X               | X                | ✓                       |
| 11.6               | Clean the complete machine  | X           | X             | X                | X               | X               | X                | ✓                       |
| 11.7               | Thoroughly clean all panel boxes.   | X           | X             | X                | X               | X               | ✓                | X                       |
| 11.8               | Check the function of all assemblies after IOH.   | X           | X             | X                | X               | X               | ✓                | X                       |
| 11.9               | Commissioning of machine for one week near the workshop, before it is put for work in regular section.                            | X           | X             | X                | X               | X               | X                | ✓                       |
| 11.10              | Ultrasonic testing of axles of machine shall be done between 40,000 to 45,000 kms of running or three years whichever is earlier. | X           | X             | X                | X               | X               | X                | ✓                       |

**Note-** During POH, Machine Supervisor and CPOH Inspecting Authority jointly inspect the Machine. Any part of Machine is to be repaired or replaced; final decision is to be taken by CPOH Inspecting authority

**Annexure-I****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. When ever 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

**List of Safety Equipments**

| S.No. | Description  | Quantity               |
|-------|--|------------------------|
| 1.    | Detonators in a tin case   | 1 box                  |
| 2.    | H.S. flag red  | 2 nos.                 |
| 3.    | H.S. flag green  | 1 nos.                 |
| 4.    | H.S. Tri colour lamps  | 2 nos.                 |
| 5.    | Chain & Padlock  | 1 set                  |
| 6.    | Clamp with Padlock   | 2 nos.                 |
| 7.    | 50 t jack with traverser   | 1 no.*                 |
| 8.    | 20 t jack with traverser   | 1 no.*                 |
| 9.    | Crow bars  | 4nos.                  |
| 10.   | Wooden blocks of different sizes   | 4nos.                  |
| 11.   | Gauge cum level  | 1 no.                  |
| 12.   | Rail thermometer (dial type)   | 1 no.                  |
| 13.   | Banner flag  | 2 nos.                 |
| 14.   | Walky talky  | 2 nos.                 |
| 15.   | First Aid Box  | 1 no                   |
| 16.   | Skids  | 4 nos.                 |
| 17.   | Working time table of section where machine working  | 1 copy                 |
| 18.   | G&SR book with up to date amendment slips  | 1 copy                 |
| 19.   | 4 cell flasher light/ LED torch,6watt  | 1 no.                  |
| 20.   | LED Petromax   | 1 no.                  |
| 21.   | Safety helmets   | For each Machine staff |
| 22.   | Protective clothing, safety shoes and safety gloves  | For each Machine staff |
| 23.   | Track Machine Manual   | 1 no.                  |
| 24.   | Accident Manual  | 1 no.                  |
| 25.   | Fire extinguisher  | 1 no.(in each cabin)   |
| 26.   | Hooter (Manually/ Remote)  | 2 nos.                 |
| 27.   | Hydraulic Hand Pump  | 1 no.                  |
| 28.   | Emergency pneumatic/Hydraulic hose of sizes suiting to different machines (complete with end fittings) | 1 no.                  |

\*list of jacks send to railway bd for approval.

## ACKNOWLEDGEMENT

Following officers and staff have made their valuable contributions in preparation of the Maintenance schedule manual for PCT(GMAC)CDCK-16- III.

### RDSO

- |    |                     |        |
|----|---------------------|--------|
| 1. | Shri Muslim Ahmad   | ARE/TM |
| 2  | “” A. K. Srivastava | SSE/TM |