

| 17-Jul-14    |   | went to  | came from     | HDET structure 2023 |  |
|--------------|---|--|---------------|---------------------|--|
| <b>BLOCK</b> | <b>A - COMMON OCCUPATIONAL SKILLS</b>                               |  |               | <b>MWA A</b>        | <b>Performs common occupational skills</b>                                       |
| <b>Task</b>  | <b>1. Uses and maintains tools and equipment.</b>                   | <b>task 2</b>                                    | <b>NEW</b>    | <b>Task 1</b>       | <b>Performs safety-related functions</b>   |
| Sub-task     | 1.01 Maintains tools and equipment.                                 | 2.01, 2.02                                       | <b>NEW</b>    | <b>1.01</b>         | <b>Performs hazard analysis</b>  |
| Sub-task     | 1.02 Uses hoisting and lifting equipment.                           | 2.04   | 3.05          | 1.02                | Maintains safe work environment  |
| Sub-task     | 1.03 Operates access equipment.                                     | 2.03   | 1.04          | 1.03                | Uses personal protective equipment (PPE) and safety equipment                    |
| Sub-task     | 1.04 Uses personal protective equipment (PPE) and safety equipment. | 1.03   | <b>NEW</b>    | 1.04                | <b>Implements safety protocols for hybrid and electric vehicles (EV)</b>         |
| <b>Task</b>  | <b>2. Performs general maintenance and inspections.</b>             | <b>task 3</b>                                    | <b>task 1</b> | <b>Task 2</b>       | <b>Uses and maintains tools and equipment</b>                                    |
| Sub-task     | 2.01 Maintains fluids.  | 3.03   | <b>NEW</b>    | <b>2.01</b>         | <b>Uses hand, power, measuring, testing, and diagnostic tools</b>                |
| Sub-task     | 2.02 Services fasteners, sealing devices, adhesives and gaskets.    |  | <b>NEW</b>    | <b>2.02</b>         | <b>Uses shop equipment</b>   |
| Sub-task     | 2.03 Services hoses, tubing, piping and fittings.                   |  |               | 2.03                | <b>Uses</b> access equipment   |
| Sub-task     | 2.04 Services bearings and seals.                                   |  |               | 2.04                | Uses hoisting, <b>rigging</b> , lifting, <b>cribbing and blocking</b> equipment  |
| Sub-task     | 2.05 Services safety features.                                      |  | <b>NEW</b>    | <b>2.05</b>         | <b>Uses welding equipment</b>  |
| Sub-task     | 2.06 Performs scheduled maintenance procedures.                     | in all of the new services subtasks in each task | <b>NEW</b>    | <b>2.06</b>         | <b>Uses heating and cutting equipment</b>  |
| Sub-task     | 2.07 Identifies operational faults.                                 |  | <b>NEW</b>    | <b>2.07</b>         | <b>Uses electronic service tools and systems for diagnostics and programming</b> |
| Sub-task     | 2.08 Performs operational check-out.                                | 3.08   |               | <b>Task 3</b>       | <b>Performs routine work practices</b>   |
|              |   |  |               | 3.01                | Uses documentation and reference materials                                       |
| <b>Task</b>  | <b>3. Organizes work.</b>   |  |               | 3.04                | 3.02 Prepares job action plan  |
| Sub-task     | 3.01 Uses documentation and reference materials.                    | 3.01   | 2.01          | 3.03                | Maintains fluids <b>and lubricants</b>   |
| Sub-task     | 3.02 Completes documentation.                                       |  |               |                     | <del>Cleans parts and materials</del>  |
| Sub-task     | 3.03 Communicates with others.                                      |  | 2.03          | 3.04                | Services hoses, tubing, piping and fittings                                      |
| Sub-task     | 3.04 Prepares job action plan.                                      | 3.02   |               |                     | <del>Services filters</del>  |
| Sub-task     | 3.05 Maintains safe work environment.                               | 1.02   | 2.04          | 3.05                | Services bearings and seals  |
|              |   |  |               | 3.06                | <b>Uses fasteners and sealing materials devices, adhesives and gaskets</b>       |
| <b>Task</b>  | <b>4. Performs routine trade activities.</b>                        |  |               | 3.07                | Services safety features   |
| Sub-task     | 4.01 Heats materials.   |  |               |                     | <del>Performs scheduled maintenance procedures</del>                             |
| Sub-task     | 4.02 Cools materials.   |  |               |                     | <del>Identifies operational faults</del>   |
| Sub-task     | 4.03 Cuts materials.  |  | 2.08          | 3.08                | Performs operational check-out   |
| Sub-task     | 4.04 Welds materials.   |  | <b>NEW</b>    | <b>Task 4</b>       | <b>Uses communication and mentoring techniques</b>                               |
| Sub-task     | 4.05 Cleans parts and materials.                                    |  | <b>NEW</b>    | <b>4.01</b>         | <b>Uses communication techniques</b>   |
|              |   |  | <b>NEW</b>    | <b>4.02</b>         | <b>Uses mentoring techniques</b>   |
|              |   |  |               |                     |  |
|              |   |  |               | <b>MWA B</b>        | <b>Services, diagnoses and repairs engines and supporting systems</b>            |
|              |   |  |               | <b>Task 5</b>       | <b>Services, diagnoses and repairs base engines</b>                              |
|              |   |  | <b>NEW</b>    | 5.01                | <b>Services base engines</b>   |
| <b>BLOCK</b> | <b>B - ENGINES AND ENGINE SUPPORT SYSTEMS</b>                       |  |               | 5.02                | Diagnoses base engines   |
| <b>Task</b>  | <b>5. Diagnoses engines and engine support systems.</b>             |  |               | 5.03                | Repairs base engines   |
| Sub-task     | 5.01 Diagnoses base engine.   |  |               | <b>Task 6</b>       | <b>Services, diagnoses and repairs lubrication systems</b>                       |

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| Sub-task | 5.02 Diagnoses lubrication systems.                             |  | NEW | 6.01    | Services lubrication systems  |
| Sub-task | 5.03 Diagnoses cooling systems.                                 |  |     | 6.02    | Diagnoses lubrication systems   |
| Sub-task | 5.04 Diagnoses intake and exhaust systems.                      |  |     | 6.03    | Repairs lubrication systems   |
| Sub-task | 5.05 Diagnoses fuel systems.                                    |  | NEW | Task 7  | Services, diagnoses and repairs intake systems  |
| Sub-task | 5.06 Diagnoses engine control systems.                          |  | NEW | 7.01    | Services intake systems   |
| Sub-task | 5.07 Diagnoses emission control systems.                        |  | NEW | 7.02    | Diagnoses intake systems  |
|          |   |  | NEW | 7.03    | Repairs intake systems  |
| Task     | 6. Repairs engines and engine support systems.                  |  | NEW | Task 8  | Services, diagnoses and repairs exhaust systems   |
| Sub-task | 6.01 Repairs base engines.                                      |  | NEW | 8.01    | Services exhaust systems  |
| Sub-task | 6.02 Repairs lubrication systems.                               |  | NEW | 8.02    | Diagnoses exhaust systems   |
| Sub-task | 6.03 Repairs cooling systems.                                   |  | NEW | 8.03    | Repairs exhaust systems   |
| Sub-task | 6.04 Repairs intake and exhaust systems.                        |  |     | Task 9  | Services, diagnoses and repairs engine management systems   |
| Sub-task | 6.05 Repairs fuel systems.                                      |  | NEW | 9.01    | Services engine management systems  |
| Sub-task | 6.06 Repairs engine control systems.                            |  |     | 9.02    | Diagnoses engine management systems   |
| Sub-task | 6.07 Repairs emission control systems.                          |  |     | 9.03    | Repairs engine management systems   |
|          |   |  |     | Task 10 | Services, diagnoses and repairs fuel delivery systems   |
|          |   |  | NEW | 10.01   | Services fuel delivery systems  |
| BLOCK    | C - HYDRAULIC, HYDROSTATIC AND PNEUMATIC SYSTEMS                |  |     | 10.02   | Diagnoses fuel delivery systems   |
| Task     | 7. Diagnoses hydraulic, hydrostatic and pneumatic systems.      |  |     | 10.03   | Repairs fuel delivery systems   |
| Sub-task | 7.01 Diagnoses hydraulic systems.                               |  |     | Task 11 | Services, diagnoses and repairs emission control systems  |
| Sub-task | 7.02 Diagnoses hydrostatic systems.                             |  | NEW | 11.01   | Services emission control systems   |
| Sub-task | 7.03 Diagnoses pneumatic systems.                               |  |     | 11.02   | Diagnoses emission control systems  |
|          |   |  |     | 11.03   | Repairs emission control systems  |
| Task     | 8. Repairs hydraulic, hydrostatic and pneumatic systems.        |  |     | Task 12 | Services, diagnoses and repairs cooling systems   |
|          |   |  | NEW | 12.01   | Services cooling systems  |
|          |   |  |     | 12.02   | Diagnoses cooling systems   |
|          |   |  |     | 12.03   | Repairs cooling systems   |
|          |   |  |     |         |   |
| Sub-task | 8.01 Repairs hydraulic systems.                                 |  |     | MWA C   | Services, diagnoses and repairs steering, suspension, brake and undercarriage systems, and wheel assemblies |
| Sub-task | 8.02 Repairs hydrostatic systems.                               |  |     | Task 13 | Services, diagnoses and steering systems  |
| Sub-task | 8.03 Repairs pneumatic systems.                                 |  | NEW | 13.01   | Services steering systems   |
|          |   |  |     | 13.02   | Diagnoses steering systems  |
|          |   |  |     | 13.03   | Repairs steering systems  |
| BLOCK    | D - DRIVETRAIN SYSTEMS  |  |     | Task 14 | Services, diagnoses and repairs suspension systems  |
| Task     | 9. Diagnoses drivetrain systems.                                |  | NEW | 14.01   | Services suspension systems   |
| Sub-task | 9.01 Diagnoses clutch systems.                                  |  |     | 14.02   | Diagnoses suspension systems  |
| Sub-task | 9.02 Diagnoses torque converters, fluid couplers and retarders. |  |     | 14.03   | Repairs suspension systems  |
| Sub-task | 9.03 Diagnoses driveline systems.                               |  |     | Task 15 | Services, diagnoses and repairs brake systems   |
| Sub-task | 9.04 Diagnoses transmission and transfer case systems.          |  | NEW | 15.01   | Services brake systems  |
| Sub-task | 9.05 Diagnoses axle and differential systems.                   |  |     | 15.02   | Diagnoses brake systems   |
| Sub-task | 9.06 Diagnoses final drive systems.                             |  |     | 15.03   | Repairs brake systems   |

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|              |   |  |            | <b>Task 16</b> | <b>Services, diagnoses and repairs undercarriage systems</b>                                     |
| <b>Task</b>  | <b>10. Repairs drivetrain systems.</b>  |  | <b>NEW</b> | 16.01          | Services undercarriage systems   |
| Sub-task     | 10.01 Repairs clutch systems.   |  |            | 16.02          | Diagnoses undercarriage systems  |
| Sub-task     | 10.02 Repairs torque converters, fluid couplers and retarders.                                |  |            | 16.03          | Repairs undercarriage systems  |
| Sub-task     | 10.03 Repairs driveline systems.  |  |            | <b>Task 17</b> | <b>Services, diagnoses and repairs wheel assemblies</b>  |
| Sub-task     | 10.04 Repairs transmission and transfer case systems.   |  | <b>NEW</b> | 17.01          | Services wheel assemblies  |
| Sub-task     | 10.05 Repairs axle and differential systems.  |  |            | 17.02          | Diagnoses wheel assemblies   |
| Sub-task     | 10.06 Repairs final drive systems.  |  |            | 17.03          | Repairs wheel assemblies   |
|              |   |  |            |                |  |
|              |   |  |            | <b>MWA D</b>   | <b>Services, diagnoses and repairs electrical and electronic systems</b>                         |
| <b>BLOCK</b> | <b>E - STEERING, SUSPENSION, BRAKE SYSTEMS, WHEEL ASSEMBLIES AND UNDERCARRIAGE</b>            |  | <b>NEW</b> | <b>Task 18</b> | <b>Service, diagnoses and repairs charging systems</b>   |
| <b>Task</b>  | <b>11. Diagnoses steering, suspension, brake systems, wheel assemblies and undercarriage.</b> |  | <b>NEW</b> | 18.01          | Services charging systems  |
| Sub-task     | 11.01 Diagnoses steering systems.   |  | <b>NEW</b> | 18.02          | Diagnoses charging systems   |
| Sub-task     | 11.02 Diagnoses suspension systems.   |  | <b>NEW</b> | 18.03          | Repairs charging systems   |
| Sub-task     | 11.03 Diagnoses brake systems.  |  | <b>NEW</b> | <b>Task 19</b> | <b>Service, diagnoses and repairs starting systems</b>   |
| Sub-task     | 11.04 Diagnoses wheel assemblies.   |  | <b>NEW</b> | 19.01          | Services starting systems  |
| Sub-task     | 11.05 Diagnoses undercarriage systems.  |  | <b>NEW</b> | 19.02          | Diagnoses starting systems   |
|              |   |  | <b>NEW</b> | 19.03          | Repairs starting systems   |
| <b>Task</b>  | <b>12. Repairs steering, suspension, brake systems, wheel assemblies and undercarriage.</b>   |  | <b>NEW</b> | <b>Task 20</b> | <b>Service, diagnoses and repairs battery systems</b>  |
| Sub-task     | 12.01 Repairs steering systems.   |  | <b>NEW</b> | 20.01          | Services battery systems   |
| Sub-task     | 12.02 Repairs suspension systems.   |  | <b>NEW</b> | 20.02          | Diagnoses battery systems  |
| Sub-task     | 12.03 Repairs brake systems.  |  | <b>NEW</b> | 20.03          | Repairs battery systems  |
| Sub-task     | 12.04 Repairs wheel assemblies.   |  |            | <b>Task 21</b> | <b>Services, diagnoses and repairs electrical components</b>                                     |
| Sub-task     | 12.05 Repairs undercarriage systems.  |  | <b>NEW</b> | 21.01          | Services electrical components   |
|              |   |  |            | 21.02          | Diagnoses electrical components  |
|              |   |  |            | 21.03          | Repairs electrical components  |
| <b>BLOCK</b> | <b>F - ELECTRICAL AND VEHICLE MANAGEMENT SYSTEMS</b>  |  | <b>NEW</b> | <b>Task 22</b> | <b>Services, diagnoses and repairs equipment management systems and electronic components</b>    |
| <b>Task</b>  | <b>13. Diagnoses electrical systems.</b>  |  | <b>NEW</b> | 22.01          | Services equipment management systems and electronic components                                  |
| Sub-task     | 13.01 Diagnoses starting/charging systems and batteries.                                      |  | <b>NEW</b> | 22.02          | Diagnoses equipment management systems and electronic components                                 |
| Sub-task     | 13.02 Diagnoses electrical components, motors and accessories.                                |  | <b>NEW</b> | 22.03          | Repairs equipment management systems and electronic components                                   |
|              |   |  |            |                |  |
| <b>Task</b>  | <b>14. Repairs electrical systems.</b>  |  |            | <b>MWA E</b>   | <b>Services, diagnoses and repairs drivetrain systems</b>  |
| Sub-task     | 14.01 Repairs starting/charging systems and batteries.  |  |            | <b>Task 23</b> | <b>Services, diagnoses and repairs clutches</b>  |
| Sub-task     | 14.02 Repairs electrical components, motors and accessories.                                  |  | <b>NEW</b> | 23.01          | Services clutches  |
|              |   |  |            | 23.02          | Diagnoses clutches   |
| <b>Task</b>  | <b>15. Diagnoses electronic vehicle management systems.</b>                                   |  |            | 23.03          | Repairs clutches   |
| Sub-task     | 15.01 Reads diagnostic trouble codes (DTCs).  |  |            | <b>Task 24</b> | <b>Services, diagnoses and repairs torque converters, fluid couplers and hydraulic retarders</b> |
| Sub-task     | 15.02 Monitors parameters.  |  | <b>NEW</b> | 24.01          | Services torque converters, fluid couplers and hydraulic retarders                               |

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| Sub-task     | 15.03 Interprets test results.   |  |            | 24.02          | Diagnoses torque converters, fluid couplers and <b>hydraulic</b> retarders     |
| Sub-task     | 15.04 Tests system circuitry and components.                             |  |            | 24.03          | Repairs torque converters, fluid couplers and <b>hydraulic</b> retarders       |
|              |  |  |            | <b>Task 25</b> | <b>Services, diagnoses and repairs manual transmissions and transfer cases</b> |
| <b>Task</b>  | <b>16. Repairs electronic vehicle management systems.</b>                |  | <b>NEW</b> | 25.01          | <b>Services manual transmissions and transfer cases</b>                        |
| Sub-task     | 16.01 Updates component software.  |  |            | 25.02          | Diagnoses <b>manual</b> transmissions and transfer cases                       |
| Sub-task     | 16.02 Repairs components.  |  |            | 25.03          | Repairs <b>manual</b> transmissions and transfer cases                         |
|              |  |  |            | <b>Task 26</b> | <b>Services, diagnoses and repairs automatic and powershift transmissions</b>  |
|              |  |  | <b>NEW</b> | 26.01          | <b>Services automatic and powershift transmissions</b>                         |
| <b>BLOCK</b> | <b>G - ENVIRONMENTAL CONTROL SYSTEMS</b>                                 |  |            | 26.02          | Diagnoses automatic <b>and powershift</b> transmissions                        |
| <b>Task</b>  | <b>17. Diagnoses environmental control systems.</b>                      |  |            | 26.03          | Repairs automatic <b>and powershift</b> transmissions                          |
| Sub-task     | 17.01 Diagnoses heating systems.   |  |            | <b>Task 27</b> | <b>Services, diagnoses and repairs driveline systems</b>                       |
| Sub-task     | 17.02 Diagnoses ventilation and filtration systems.                      |  | <b>NEW</b> | 27.01          | <b>Services driveline systems</b>  |
| Sub-task     | 17.03 Diagnoses air conditioning systems.                                |  |            | 27.02          | Diagnoses driveline systems  |
| Sub-task     | 17.04 Diagnoses sound suppression systems.                               |  |            | 27.03          | Repairs driveline systems  |
|              |  |  |            | <b>Task 28</b> | <b>Services, diagnoses and repairs drive axles and differentials</b>           |
| <b>Task</b>  | <b>18. Repairs environmental control systems.</b>                        |  | <b>NEW</b> | 28.01          | <b>Services drive axles and differentials</b>                                  |
| Sub-task     | 18.01 Repairs heating systems.   |  |            | 28.02          | Diagnoses <b>drive</b> axles and differentials                                 |
| Sub-task     | 18.02 Repairs ventilation and filtration systems.                        |  |            | 28.03          | Repairs <b>drive</b> axles and differentials                                   |
| Sub-task     | 18.03 Repairs air conditioning systems.                                  |  |            | <b>Task 29</b> | <b>Services, diagnoses and repairs final drive systems</b>                     |
| Sub-task     | 18.04 Repairs sound suppression systems.                                 |  | <b>NEW</b> | 29.01          | <b>Services final drive systems</b>  |
|              |  |  |            | 29.02          | Diagnoses final drive systems  |
|              |  |  |            | 29.03          | Repairs final drive systems  |
| <b>BLOCK</b> | <b>H - STRUCTURAL COMPONENTS, ACCESSORIES AND ATTACHMENTS</b>            |  |            | <b>MWA F</b>   | <b>Services, diagnoses and repairs environmental control systems</b>           |
| <b>Task</b>  | <b>19. Diagnoses structural components, accessories and attachments.</b> |  |            | <b>Task 30</b> | <b>Services, diagnoses and repairs heating systems</b>                         |
| Sub-task     | 19.01 Diagnoses structural components.                                   |  | <b>NEW</b> | 30.01          | <b>Services heating systems</b>  |
| Sub-task     | 19.02 Diagnoses operator station components.                             |  |            | 30.02          | Diagnoses heating systems  |
| Sub-task     | 19.03 Diagnoses attachments and accessories.                             |  |            | 30.03          | Repairs heating systems  |
|              |  |  |            | <b>Task 31</b> | <b>Services, diagnoses and repairs ventilation and filtration systems</b>      |
| <b>Task</b>  | <b>20. Repairs structural components, accessories and attachments.</b>   |  | <b>NEW</b> | 31.01          | <b>Services ventilation and filtration systems</b>                             |
| Sub-task     | 20.01 Performs mechanical repairs on structural components.              |  |            | 31.02          | Diagnoses ventilation and filtration systems                                   |
| Sub-task     | 20.02 Repairs operator station components.                               |  |            | 31.03          | Repairs ventilation and filtration systems                                     |
| Sub-task     | 20.03 Repairs attachments and accessories.                               |  |            | <b>Task 32</b> | <b>Services, diagnoses and repairs air conditioning systems</b>                |
| Sub-task     | 20.04 Installs attachments and accessories.                              |  | <b>NEW</b> | 32.01          | <b>Services air conditioning systems</b>                                       |
|              |  |  |            | 32.02          | Diagnoses air conditioning systems   |
|              |  |  |            | 32.03          | Repairs air conditioning systems   |
|              |  |  |            | <b>Task 33</b> | <b>Services, diagnoses and repairs sound suppression systems</b>               |
|              |  |  | <b>NEW</b> | 33.01          | <b>Services sound suppression systems</b>                                      |

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|            | 33.02          | Diagnoses sound suppression systems  |
|            | 33.03          | Repairs sound suppression systems  |
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|            | <b>MWA G</b>   | <b>Services, diagnoses and repairs hydraulic, hydrostatic and pneumatic systems</b>                          |
|            | <b>Task 34</b> | <b>Services, diagnoses and repairs hydraulic systems</b>   |
| <b>NEW</b> | 34.01          | Services hydraulic systems   |
|            | 34.02          | Diagnoses hydraulic systems  |
|            | 34.03          | Repairs hydraulic systems  |
|            | <b>Task 35</b> | <b>Services, diagnoses and repairs hydrostatic systems</b>   |
| <b>NEW</b> | 35.01          | Services hydrostatic systems   |
|            | 35.02          | Diagnoses hydrostatic systems  |
|            | 35.03          | Repairs hydrostatic systems  |
|            | <b>Task 36</b> | <b>Services, diagnoses and repairs pneumatic systems</b>   |
| <b>NEW</b> | 36.01          | Services pneumatic systems   |
|            | 36.02          | Diagnoses pneumatic systems  |
|            | 36.03          | Repairs pneumatic systems  |
|            |                |  |
|            | <b>MWA H</b>   | <b>Services, diagnoses and repairs structural components, operator stations, attachments and accessories</b> |
|            | <b>Task 37</b> | <b>Services, diagnoses and repairs structural components</b>   |
| <b>NEW</b> | 37.01          | Services structural components   |
|            | 37.02          | Diagnoses structural components  |
|            | 37.03          | Performs mechanical repairs on structural components   |
|            |                |  |
|            | <b>Task 38</b> | <b>Services, diagnoses and repairs operator station components</b>   |
| <b>NEW</b> | 38.01          | Services operator station components   |
|            | 38.02          | Diagnoses operator station components  |
|            | 38.03          | Repairs operator station components  |
|            |                |  |
|            | <b>Task 39</b> | <b>Services, diagnoses and repairs attachments and accessories</b>   |
| <b>NEW</b> | 39.01          | Services attachments and accessories   |
|            | 39.02          | Diagnoses attachments and accessories  |
|            | 39.03          | Repairs attachments and accessories  |
|            | 39.04          | Installs attachments and accessories   |
|            |                |  |
| <b>NEW</b> | <b>MWA I</b>   | <b>SERVICES, DIAGNOSES AND REPAIRS HYBRID AND ELECTRIC VEHICLES (EV)</b>                                     |
| <b>NEW</b> | <b>Task 40</b> | <b>Services, diagnoses and repairs hybrid vehicles</b>   |
| <b>NEW</b> | 40.01          | Services hybrid vehicles   |
| <b>NEW</b> | 40.02          | Diagnoses hybrid vehicles  |
| <b>NEW</b> | 40.03          | Repairs hybrid vehicles  |
| <b>NEW</b> | <b>Task 41</b> | <b>Services, diagnoses and repairs electric vehicles (EV)</b>  |
| <b>NEW</b> | 41.01          | Services electric vehicles (EV)  |
| <b>NEW</b> | 41.02          | Diagnoses electric vehicles (EV)   |
| <b>NEW</b> | 41.03          | Repairs electric vehicles (EV)   |
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