



## Contents

|  |           |
|--|-----------|
| <b>00 - Technical data</b>   | <b>1</b>  |
| <b>1 Safety information</b>  | <b>1</b>  |
| 1.1 Safety precautions when working on vehicles with high-voltage system               | 1         |
| 1.2 General safety provisions  | 5         |
| 1.3 Safety measures when working on vehicles with a start/stop system                  | 6         |
| 1.4 Safety precautions when using testers and measuring instruments during a road test | 6         |
| 1.5 Safety precautions when tow-starting or towing                                     | 6         |
| <b>2 Identification</b>  | <b>7</b>  |
| 2.1 Gearbox identification   | 7         |
| <b>3 Repair instructions</b>   | <b>8</b>  |
| 3.1 General information  | 8         |
| 3.2 Rules for cleanliness  | 9         |
| 3.3 General repair instructions  | 9         |
| 3.4 Safety functions of gearbox control unit   | 10        |
| <b>4 Technical data</b>  | <b>12</b> |
| 4.1 Capacities   | 12        |
| <b>30 - Clutch</b>   | <b>13</b> |
| <b>1 Clutch</b>  | <b>13</b> |
| 1.1 Assembly overview - dual clutch  | 13        |
| 1.2 Renewing input shaft seal  | 13        |
| <b>2 Clutch mechanism</b>  | <b>15</b> |
| 2.1 Removing and installing clutch engagement  | 15        |
| <b>34 - Controls, housing</b>  | <b>17</b> |
| <b>1 Mechatronic unit</b>  | <b>17</b> |
| 1.1 Assembly overview - mechatronic unit   | 17        |
| 1.2 Removing and installing sump   | 19        |
| 1.3 Removing and installing mechatronic unit   | 22        |
| <b>2 Selector mechanism</b>  | <b>28</b> |
| 2.1 Assembly overview - selector mechanism   | 28        |
| 2.2 Manual release from position P   | 34        |
| 2.3 Removing and installing selector lever handle                                      | 36        |
| 2.4 Moving push-button in the handle to installation position                          | 42        |
| 2.5 Removing and installing selector mechanism   | 44        |
| 2.6 Removing and installing gear selector cable  | 54        |
| 2.7 Checking selector mechanism  | 62        |
| 2.8 Checking and adjusting selector lever cable  | 65        |
| 2.9 Renewing selector shaft seal   | 68        |
| <b>3 Removing and installing gearbox</b>   | <b>73</b> |
| 3.1 Removing gearbox   | 73        |
| 3.2 Installing gearbox   | 73        |
| 3.3 Specified torques for gearbox  | 74        |
| <b>4 Assembly mountings</b>  | <b>76</b> |
| 4.1 Assembly overview - assembly mountings   | 76        |
| <b>5 Transporting gearbox</b>  | <b>77</b> |
| <b>6 Gear oil circuit</b>  | <b>79</b> |
| 6.1 Assembly overview - gear oil circuit   | 79        |
| 6.2 Removing and installing gear oil cooler  | 79        |
| 6.3 Removing and installing gear oil filter  | 82        |
| <b>7 Gear oil</b>  | <b>84</b> |



|  |  |            |
|--|--|------------|
| 7.1  | Overview of fitting locations - oil drain and inspection plugs .....       | 84         |
| 7.2  | Checking gear oil level .....  | 84         |
| 7.3  | Draining and filling gear oil .....  | 91         |
| 7.4  | Filling with gear oil after mechatronic unit has been renewed .....        | 96         |
| <b>8</b>                                     | <b>Dismantling and assembling gearbox .....</b>                            | <b>100</b> |
| 8.1  | System overview - gearbox .....  | 100        |
| 8.2  | Assembly overview - gearbox .....  | 100        |
| 8.3  | Assembly overview - hybrid module .....                                    | 102        |
| 8.4  | Removing hybrid module .....   | 102        |
| 8.5  | Renewing hybrid module .....   | 109        |
| 8.6  | Installing hybrid module .....   | 115        |
| 8.7  | Removing and installing rotor position sensor and temperature sender ..... | 119        |
| 8.8  | Renewing sealing cap .....   | 123        |
| <b>35 - Gears, shafts .....</b>              |  | <b>127</b> |
| 1  | <b>Dismantling and assembling gears and shafts .....</b>                   | <b>127</b> |
| <b>39 - Final drive - differential .....</b> |  | <b>128</b> |
| 1  | <b>Seals .....</b>   | <b>128</b> |
| 1.1  | Overview of fitting locations - oil seals .....                            | 128        |
| 1.2  | Renewing left seal .....   | 128        |