

Contents

| | |
|---|-----------|
| 44 - Wheels, tyres, vehicle geometry | 1 |
| 1 Wheel/Tyre Guide - general information | 1 |
| 2 How to use the Wheel/Tyre Guide | 2 |
| 2.1 Overview | 2 |
| 2.2 General notes | 2 |
| 2.3 Notes | 3 |
| 2.4 Explanations on world regions | 3 |
| 2.5 Definition of tyre package | 4 |
| 2.6 Determining correct tyre package via version code | 5 |
| 2.7 NEDC, WLTP and RDE | 6 |
| 3 Legal and technical requirements (documents) | 8 |
| 3.1 Legal requirements | 8 |
| 3.2 Technical requirements | 8 |
| 3.3 Load capacity depending on speed and winter tyres | 9 |
| 3.4 Registration documents since 1 October 2005 | 10 |
| 3.5 COC document (EC certificate of conformity) | 11 |
| 3.6 EC type approval number, sales type and trade name | 11 |
| 4 Wheel change | 12 |
| 4.1 Fitting instructions | 12 |
| 4.2 Corrosion protection for wheel centring seat | 15 |
| 4.3 Fitting wheels | 16 |
| 4.4 Position of anti-theft wheel bolts - steel wheels | 18 |
| 5 Tyre assembly | 19 |
| 5.1 Assembly overview - alloy wheel | 19 |
| 5.2 Assembly overview - run-flat wheels with Audi PAX tyres | 19 |
| 5.3 Pressing tyre off | 19 |
| 5.4 Removing tyre sealant | 20 |
| 5.5 Removing tyre | 20 |
| 5.6 Bringing tyre up to assembly temperature | 23 |
| 5.7 Fitting tyre | 25 |
| 5.8 Match-mounting rim and tyre | 30 |
| 5.9 Checking radial and lateral runout on wheel/tyre | 31 |
| 5.10 Match-mounting wheel and tyre | 34 |
| 5.11 Vibration control system VAS 6230 A | 35 |
| 5.12 Balancing wheel | 35 |
| 6 Tyre Pressure Monitoring System | 41 |
| 6.1 System description - Tyre Pressure Monitoring System | 41 |
| 6.2 Assembly overview - tyre pressure sensor | 43 |
| 6.3 Removing and installing tyre pressure sensor | 49 |
| 6.4 Removing and installing metal valve | 53 |
| 7 Wheel bolts | 55 |
| 7.1 Tightening wheel bolts correctly | 55 |
| 7.2 Tightening torques for wheel bolts | 56 |
| 7.3 Wheel bolts - versions | 58 |
| 7.4 Anti-theft wheel bolt | 59 |
| 7.5 Adapter sets for anti-theft wheel bolts | 59 |
| 8 Information on tyres | 62 |
| 8.1 Tyre requirements and tyre maintenance | 62 |
| 8.2 Tyre markings | 66 |
| 8.3 Markings on tyre sidewall - Audi PAX tyres | 73 |
| 8.4 EU tyre label | 73 |
| 8.5 Construction - belted radial tyre | 78 |



| | | |
|-----------|--|------------|
| 8.6 | Construction and markings - SST tyre, run-flat tyre | 79 |
| 8.7 | Construction - run-flat tyre with Seal Inside technology | 80 |
| 8.8 | Self supporting tyres (SST) with run-flat capability | 82 |
| 8.9 | Storing tyres | 84 |
| 8.10 | Tyre ageing | 84 |
| 9 | Tyre sealant | 86 |
| 9.1 | Disposal of sealant | 86 |
| 10 | Information on wheel rims | 87 |
| 10.1 | Construction - wheel rim | 87 |
| 10.2 | Identification | 88 |
| 10.3 | Composite wheels | 89 |
| 10.4 | Alloy wheels - care and maintenance | 89 |
| 10.5 | Alloy wheels - repairing | 90 |
| 10.6 | Removing and installing hub cover - alloy wheels with open threaded connection | 90 |
| 10.7 | Renewing trim elements | 91 |
| 10.8 | Removing and installing valve | 98 |
| 11 | Problems with handling and driving characteristics | 101 |
| 11.1 | Tyre noise | 101 |
| 11.2 | Vehicle pulls to one side | 103 |
| 11.3 | Rough running and vibration | 108 |
| 11.4 | Flat spots caused by storage and handling | 110 |
| 12 | Evaluating tyres/tyre damage | 112 |
| 12.1 | Flat spots caused by storage and handling | 112 |
| 12.2 | Undulations | 112 |
| 12.3 | Saw-tooth wear | 113 |
| 12.4 | Flat spots caused by hard braking | 114 |
| 12.5 | Swellings in tyre sidewall | 115 |
| 12.6 | Cuts | 116 |
| 12.7 | Damage caused by foreign objects | 116 |
| 12.8 | Torn tread | 117 |
| 12.9 | Tyre damage due to insufficient inflation pressure | 117 |
| 12.10 | Checking tyres | 117 |
| 12.11 | Damage occurring when fitting tyres | 119 |
| 13 | Tyre wear | 120 |
| 13.1 | Factors influencing tyre service life | 120 |
| 13.2 | Saw-tooth wear | 121 |
| 13.3 | Wear of high-speed tyres | 121 |
| 13.4 | Measuring tread depth | 122 |
| 13.5 | One-sided wear | 122 |
| 13.6 | Outer shoulder wear | 125 |
| 13.7 | Diagonal erosion | 126 |
| 13.8 | Wear in middle of tyre | 126 |
| 13.9 | Permissible differences in tread depth | 127 |
| 14 | Assembly overviews | 128 |
| 14.1 | Assembly overview - alloy wheel | 128 |
| 14.2 | Assembly overview - run-flat wheels with Audi PAX tyres | 130 |
| 15 | Snow chains | 133 |
| 15.1 | Fitting and using snow chains | 133 |
| 16 | Standard/temporary spare wheels and recommended temporary spare tyres | 134 |
| 16.1 | Notes on using temporary spare wheels | 134 |
| 16.2 | Spare wheel with warning sticker | 135 |
| 16.3 | Retrofitting standard/temporary spare wheel | 135 |