

## Contents

<b>27 - Starter, current supply, CCS</b>	<b>1</b>
<b>1 Battery</b>	<b>1</b>
1.1 Basics about batteries	1
1.2 Battery types	1
1.3 Warning instructions and safety precautions when working on the battery	4
1.4 Working on the airbag system	5
1.5 Screwed connections of battery poles	6
<b>2 Checking battery</b>	<b>7</b>
2.1 Check battery with a magic eye	7
2.2 Checking fleece battery (AGM)	9
2.3 Visual inspection of the battery	9
2.4 Notes on battery replacement and battery degassing	10
2.5 Perform a battery test with the battery tester with printer VAS 6161	11
2.6 Check current drain when charging	12
2.7 No-load voltage measurement - Demonstration vehicles and stock vehicles	13
<b>3 Charge battery</b>	<b>14</b>
3.1 Charging battery	14
3.2 Severely discharged batteries	16
<b>4 Cruise control system (CCS)</b>	<b>17</b>
4.1 General description	17
4.2 Activate/deactivate cruise control system	17
<b>92 - Windscreen wash/wipe system</b>	<b>18</b>
<b>1 Repairing washer fluid level pipes</b>	<b>18</b>
1.1 Repair solution for plain ended pipe	18
1.2 Repair solution for corrugated pipe	19
<b>2 Washer fluid lines</b>	<b>22</b>
2.1 Connections of washer fluid level pipes	22
<b>3 Joint-free wiper blades</b>	<b>24</b>
3.1 Distinguishing features of joint-free wiper blades	24
<b>94 - Lights, bulbs, switches - exterior</b>	<b>25</b>
<b>1 Gas discharge lamps</b>	<b>25</b>
1.1 Use and safety instructions for gas discharge lamps	25
<b>2 LED headlights</b>	<b>27</b>
2.1 Application and safety instructions for LED headlights	27
<b>96 - Lights, bulbs, switches - interior</b>	<b>28</b>
<b>1 12V power sockets, cigarette lighter</b>	<b>28</b>
1.1 Removing and installing the 12 V power socket/cigarette lighter in the centre console	28
<b>97 - Wiring</b>	<b>30</b>
<b>1 Vehicle diagnosis, testing and information systems</b>	<b>30</b>
1.1 Safety instructions	30
1.2 Connect vehicle diagnosis, measurement and information system VAS 505x	30
<b>2 Wiring harness repair</b>	<b>32</b>
2.1 General instructions for the repair on the vehicle electrics	32
2.2 General instructions for wiring harness and plug repair	33
2.3 Tool descriptions	34
2.4 Repair of airbag and belt tensioner cables	37
2.5 Repair of CAN bus lines	39
2.6 Crimp new contacts	40



2.7	Repair of 0.13 mm <sup>2</sup> / 0.35 mm <sup>2</sup> / 0.5 mm <sup>2</sup> cable .....	42
2.8	Repair a 10 mm <sup>2</sup> - or 16 mm <sup>2</sup> cable with an individual joint butt splice connector .....	46
2.9	Line break with single repair point .....	50
2.10	Line break with two repair points .....	52
2.11	Repairing aerial cables .....	53
<b>3</b>	<b>Repairing socket housings and connectors .....</b>	<b>65</b>
3.1	Notes on repairing socket housings and connectors .....	65
3.2	Repairing contacts in socket housings .....	65
3.3	Assembly of single cable seals .....	66
<b>4</b>	<b>Unlocking and disassembling socket housings .....</b>	<b>69</b>
4.1	Notes on unlocking and disassembling socket housings .....	69
4.2	Secondary lock .....	69
4.3	Primary lock .....	70
<b>5</b>	<b>Repairing optical fibres .....</b>	<b>75</b>
5.1	General points .....	75
5.2	Preparing optical fibres .....	75
5.3	Removing and installing optical fibre in the housing .....	80
<b>6</b>	<b>Contact surface cleaning set VAS 6410 .....</b>	<b>81</b>
6.1	Use contact surface cleaning set VAS 6410 .....	81
6.2	Repairing the cable eyes .....	81
6.3	Repairing screwed connections .....	83
6.4	Cleaning the battery pole terminals and battery poles .....	84
6.5	Preserving .....	85
<b>7</b>	<b>Replace the lambda probe .....</b>	<b>87</b>
7.1	Replace the LSF lambda probe (4-pole) .....	87
7.2	Replace the LSU lambda probe (6-pole) .....	88
7.3	Protective pipe variants of the unit lambda probes .....	88