

## Contents

<b>01 - Self-diagnosis . . . . .</b>	<b>1</b>
1 <b>Mono-Motronic self-diagnosis . . . . .</b>	<b>1</b>
1.1    Mono-Motronic self-diagnosis . . . . .	1
1.2    List of control units . . . . .	1
1.3    Technical data of self-diagnosis . . . . .	1
1.4    Connecting vehicle diagnostic, testing and information system VAS 5051/ fault reader V.A.G 1551 and selecting functions . . . . .	1
2 <b>Interrogating and erasing fault memory . . . . .</b>	<b>4</b>
2.1    Interrogating and erasing fault memory . . . . .	4
2.2    Fault table . . . . .	6
3 <b>Final control diagnosis . . . . .</b>	<b>11</b>
3.1    Final control diagnosis . . . . .	11
4 <b>Basic setting . . . . .</b>	<b>13</b>
4.1    Basic setting . . . . .	13
5 <b>Encoding control unit . . . . .</b>	<b>16</b>
5.1    Encoding control unit . . . . .	16
6 <b>Checking wiring of diagnostic connectors . . . . .</b>	<b>17</b>
6.1    Checking wiring of diagnostic connectors . . . . .	17
6.2    Checking power supply for "black" diagnostic connector . . . . .	18
6.3    Checking wiring between "white" diagnostic connector and engine control unit . . . . .	18
<b>24 - Mixture preparation, Injection . . . . .</b>	<b>21</b>
1 <b>Servicing Mono-Motronic injection system . . . . .</b>	<b>21</b>
1.1    Servicing Mono-Motronic injection system . . . . .	21
1.2    Safety precautions . . . . .	21
1.3    Rules for cleanliness . . . . .	21
1.4    Technical data . . . . .	21
1.5    Exploded view of fitting locations . . . . .	22
1.6    Removing and installing injection system components . . . . .	25
1.7    Servicing top part of injection unit . . . . .	30
1.8    Servicing bottom part of injection unit . . . . .	33
1.9    Wiring and component check using test box V.A.G 1598 A . . . . .	37
1.10   Replacing engine control unit . . . . .	38
1.11   Checking idling speed . . . . .	40
1.12   Checking system pressure, fuel pressure regulator and holding pressure . . . . .	42
1.13   Checking injector . . . . .	46
1.14   Checking overrun shutoff . . . . .	49
1.15   Checking fuel-pump relay -J17 and actuation . . . . .	51
1.16   Checking intake system for leaks (unmetered air) . . . . .	56
2 <b>Checking Lambda control . . . . .</b>	<b>57</b>
2.1    Checking Lambda control . . . . .	57
2.2    Checking Lambda probe and signal wire . . . . .	58
2.3    Checking Lambda probe heating . . . . .	59
2.4    Removing and installing Lambda probe . . . . .	62
3 <b>Checking fuel tank breather system . . . . .</b>	<b>63</b>
3.1    Checking fuel tank breather system . . . . .	63
3.2    Checking activated charcoal filter solenoid valve -N80 . . . . .	63
4 <b>Checking throttle valve potentiometer -G69 . . . . .</b>	<b>67</b>
4.1    Checking throttle valve potentiometer -G69 . . . . .	67
4.2    Checking and adjusting throttle damper . . . . .	69
4.3    Checking throttle valve positioner -V60 . . . . .	72
4.4    Checking idling-speed switch . . . . .	74

<b>5</b>	<b>Checking intake air preheating . . . . .</b>	<b>78</b>
5.1	Checking intake air preheating . . . . .	78
<b>6</b>	<b>Checking intake-manifold preheating . . . . .</b>	<b>79</b>
6.1	Checking intake-manifold preheating . . . . .	79
6.2	Checking intake-manifold preheating heater element -N51 . . . . .	80
6.3	Checking intake-manifold preheating relay -J81 . . . . .	80
<b>7</b>	<b>Checking additional signals . . . . .</b>	<b>85</b>
7.1	Checking additional signals . . . . .	85
7.2	Checking speed increase for air conditioner . . . . .	85
7.3	Checking air-conditioner compressor shutoff . . . . .	86
7.4	Checking engine-speed signal . . . . .	87
7.5	Checking vehicle-speed signal . . . . .	87
7.6	Checking gear signal . . . . .	88
7.7	Checking ignition timing retardation on changing gear . . . . .	89
<b>8</b>	<b>Vacuum diagram . . . . .</b>	<b>90</b>
8.1	Vacuum diagram . . . . .	90
<b>28 - Ignition system . . . . .</b>	<b>92</b>	
<b>1</b>	<b>Checking ignition system . . . . .</b>	<b>92</b>
1.1	Checking ignition system . . . . .	92
1.2	Safety precautions . . . . .	92
1.3	Technical data . . . . .	92
1.4	Servicing ignition system . . . . .	93
1.5	Installing ignition distributor . . . . .	96
1.6	Checking and adjusting ignition point . . . . .	97
1.7	Checking ignition transformer-N152 . . . . .	99
1.8	Checking output stage for ignition transformer . . . . .	101
1.9	Checking intake-air temperature sender -G42 . . . . .	104
1.10	Checking coolant temperature sender -G62 . . . . .	107
1.11	Checking control unit power supply . . . . .	110
1.12	Checking Hall sender -G40 . . . . .	112