

---

# 13A GASOLINE DIRECT INJECTION (GDI)

## CONTENTS

<b>GENERAL INFORMATION .....</b>	<b>13A-3</b>	<b>INTAKE AIR TEMPERATURE SENSOR CHECK .....</b>	<b>13A-123</b>
<b>SERVICE SPECIFICATIONS .....</b>	<b>13A-7</b>	<b>ENGINE COOLANT TEMPERATURE SENSOR CHECK .....</b>	<b>13A-123</b>
<b>SEALANT .....</b>	<b>13A-7</b>	<b>THROTTLE POSITION SENSOR (TPS) CHECK .....</b>	<b>13A-124</b>
<b>SPECIAL TOOLS .....</b>	<b>13A-7</b>	<b>ACCELERATOR PEDAL POSITION SENSOR (APS) CHECK .....</b>	<b>13A-125</b>
<b>TROUBLESHOOTING .....</b>	<b>13A-9</b>	<b>ACCELERATOR PEDAL POSITION SWITCH CHECK .....</b>	<b>13A-125</b>
<b>ON-VEHICLE SERVICE .....</b>	<b>13A-115</b>	<b>OXYGEN SENSOR CHECK .....</b>	<b>13A-126</b>
FUEL PUMP CONNECTOR DISCONNECTION (HOW TO REDUCE FUEL PRESSURE) .....	13A-115	<b>INJECTOR CHECK .....</b>	<b>13A-127</b>
FUEL PUMP OPERATION (LOW PRESSURE) CHECK .....	13A-116	<b>THROTTLE CONTROL SERVO CHECK .....</b>	<b>13A-127</b>
FUEL LEAK TEST .....	13A-116	<b>CATALYST TEMPERATURE SENSOR CHECK .....</b>	<b>13A-127</b>
THROTTLE BODY (THROTTLE VALVE AREA) CLEANING .....	13A-116	<b>INJECTOR .....</b>	<b>13A-128</b>
THROTTLE POSITION SENSOR (TPS) ADJUSTMENT .....	13A-117	<b>FUEL PUMP (HIGH PRESSURE) ..</b>	<b>13A-132</b>
ACCELERATOR PEDAL POSITION SENSOR (APS) ADJUSTMENT .....	13A-118	<b>THROTTLE BODY .....</b>	<b>13A-134</b>
FUEL PRESSURE MEASUREMENT ..	13A-119	<b>INJECTOR DRIVER .....</b>	<b>13A-135</b>
COMPONENT LOCATION .....	13A-122	<b>ENGINE-ECU &lt;M/T&gt;, ENGINE A/T-ECU &lt;A/T&gt;, THROTTLE VALVE CONTROLLER .....</b>	<b>13A-136</b>
CONTINUITY CHECK OF ENGINE CONTROL RELAY, FUEL PUMP RELAY, INJECTOR DRIVER RELAY AND THROTTLE CONTROL SERVO RELAY .....	13A-123		

---