AIRmatic Level Calibration

- AIRmatic level calibration procedure is very similar to the ABC procedure
- Equipment required same as ABC
  - Level MKS rack
  - Romess
  - SDS/DAS
- Vehicle preparation same as ABC
  - Pins pulled from turn tables and slip plates
  - Vehicle running and in “Park”
  - Parking brake not applied, no brake locks or wheel chocks applied
  - Use “raise vehicle” switch to settle the suspension
- Differences include
  - Accessing the level calibration procedure in SDS/DAS
  - 3 level sensor inputs (except 164 / X164) compared to 4 from ABC
  - Specific voltage value ranges for level sensors on some AIRmatic system procedures

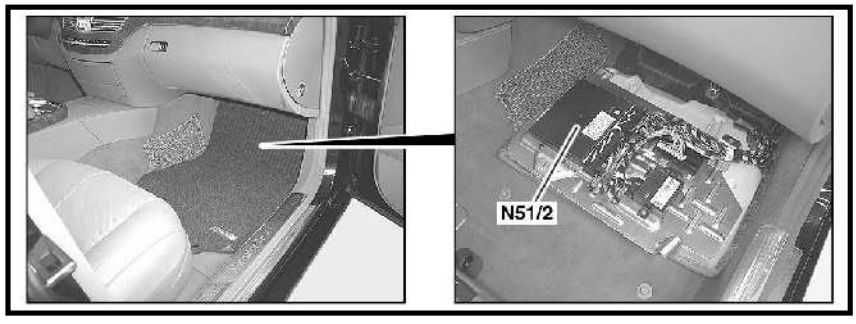
Electrical Testing (ABC and AIRmatic)

- Electrical tests on all systems are conducted with test cable (W140 589 00 21 00) and socket box (W129 589 00 21 00)
- Test cable also used for ESP electrical test
- On vehicles (215 / 220), ESP and ABC/AIRmatic modules are located next to each other (identify proper module)





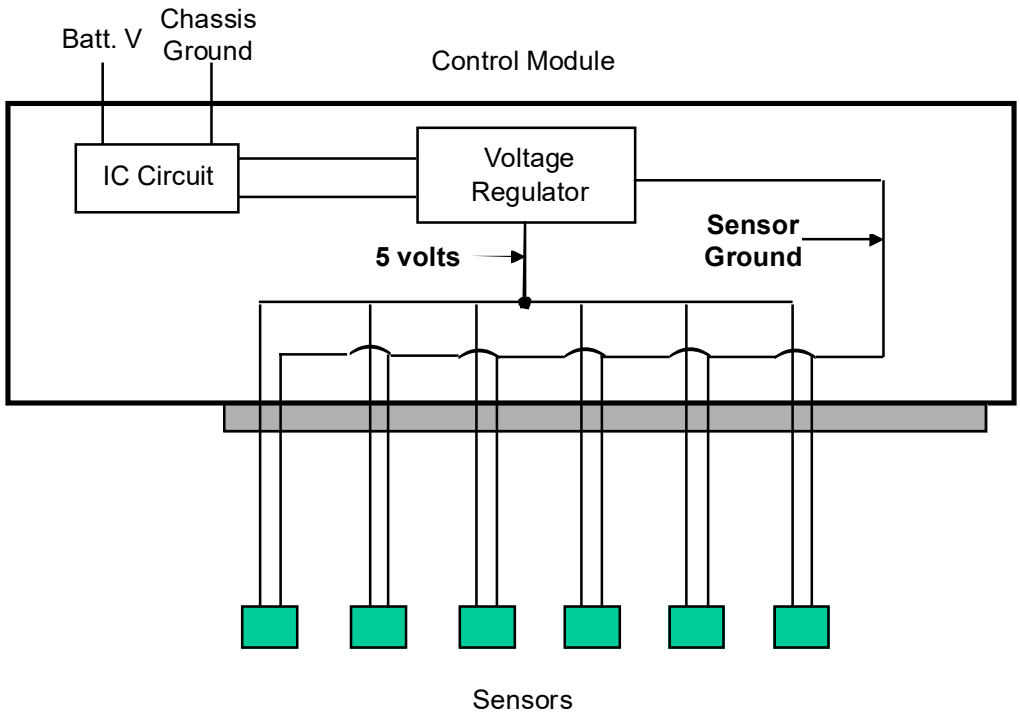
215/220



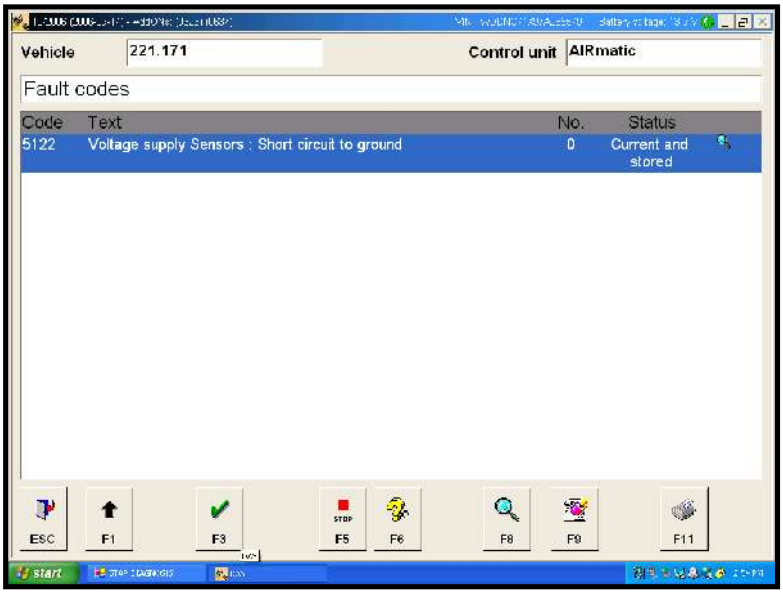
216/221

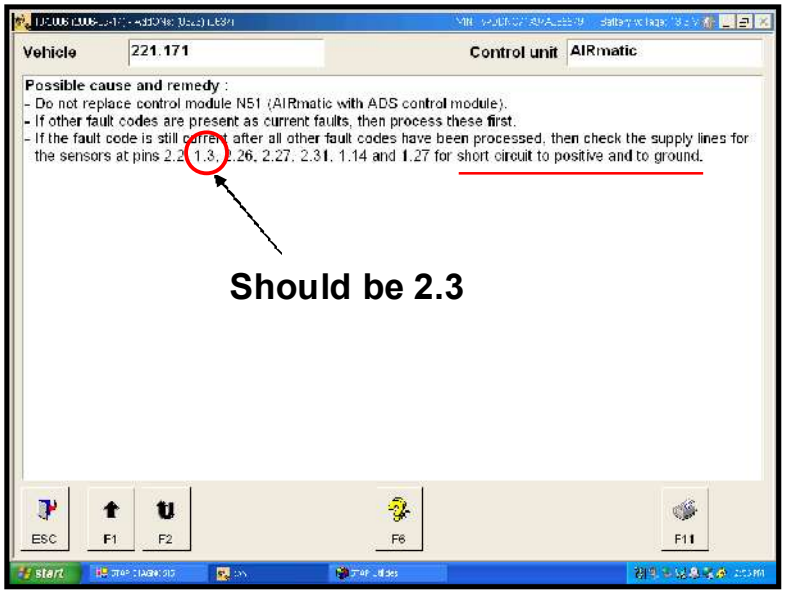
Sensor Power and Ground

- 5 volt supply voltage and sensor ground for all sensors provided by a common voltage regulator in control module
- Electrical short to power or ground (chassis or sensor ground) will affect all sensors



Diagnostic Example
5V Sensor Supply Voltage Short to Ground

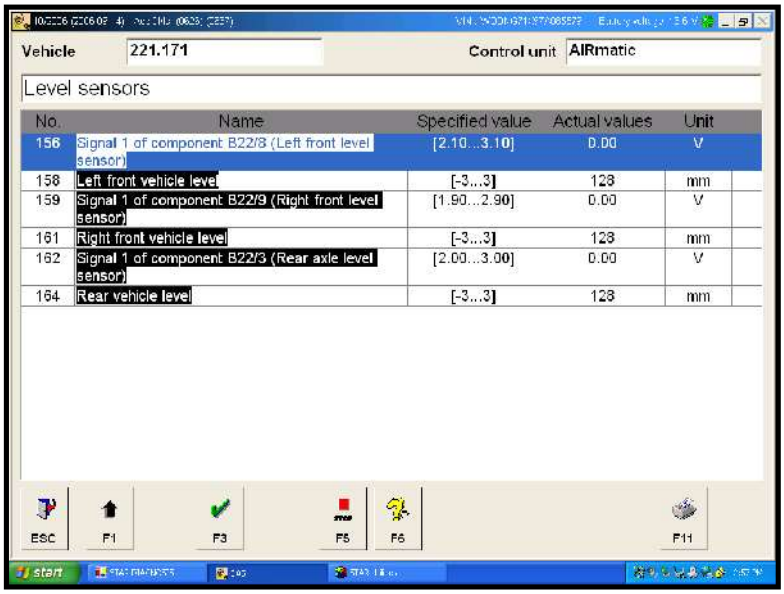


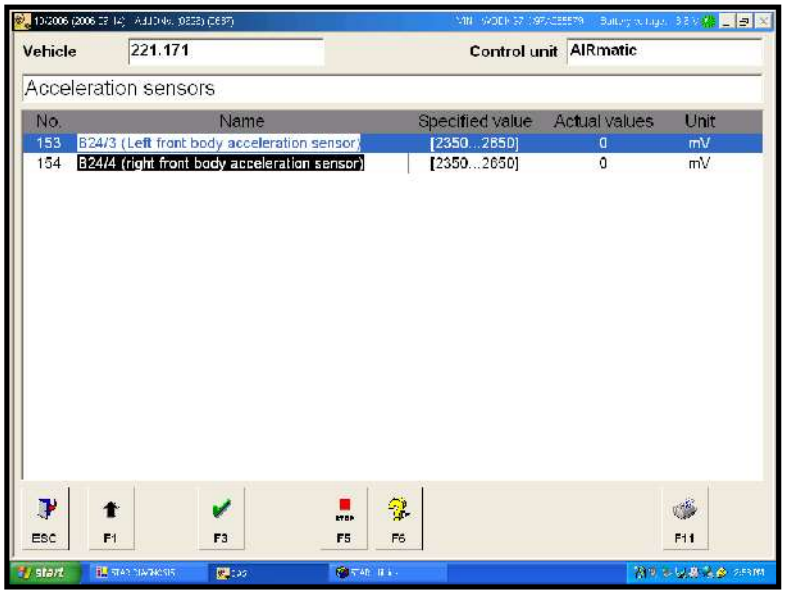


- DTC verifies voltage supply for sensor shorted to ground, current and stored
- Test routine instructs to test for short to positive and to ground (module disconnected)

Note: first digit indicates connector number, second indicates pin

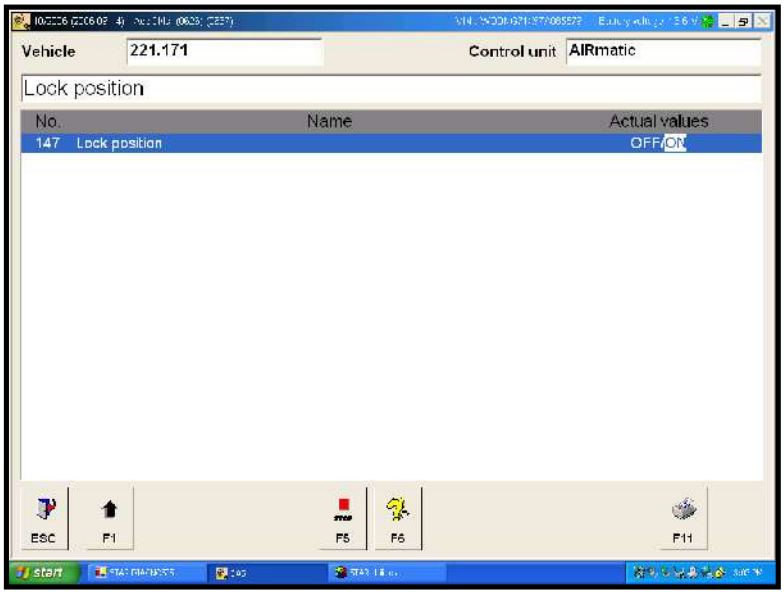
Diagnostic Example
5V Sensor Supply Voltage Short to Ground

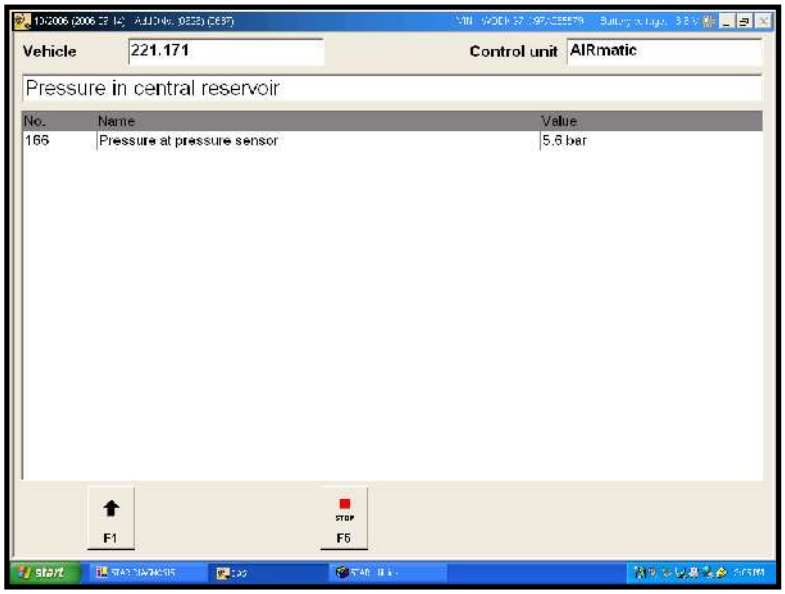




- Although the test routine specified to test for a short to positive and to ground, reviewing the Actual values of the sensors verifies the short to ground

Diagnostic Example
5V Sensor Supply Voltage Short to Ground



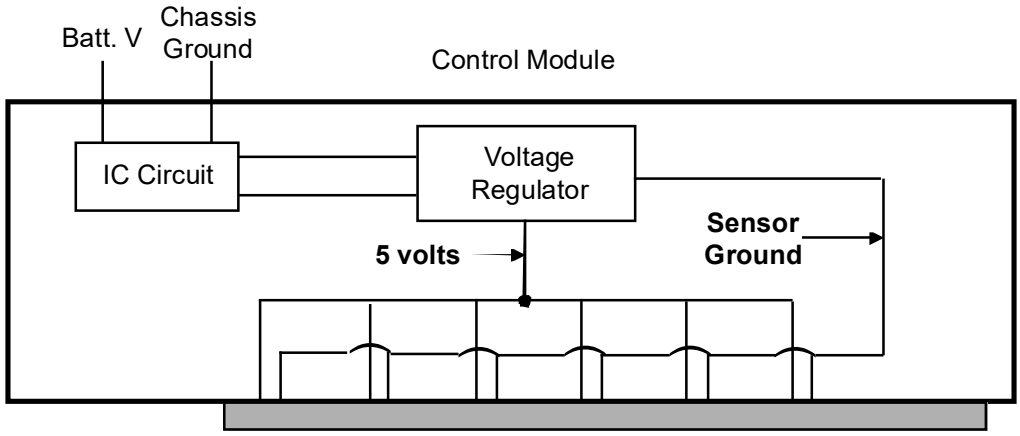


- When the control module recognizes the problem, it will lock (de-energize) all of the actuators
- Even though the pressure sensor is not functioning, the value displayed will be the last known good value prior to the problem occurring

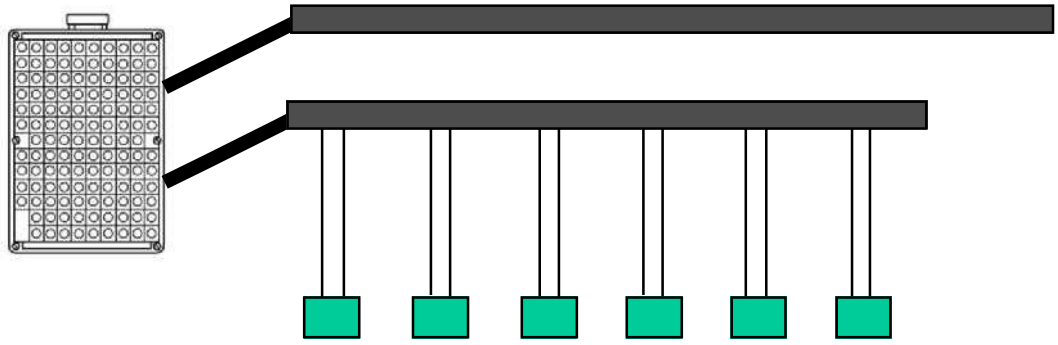
Diagnostic Example

5V Sensor Supply Voltage Short to Ground

- When testing resistance on sensor circuits, have control module **disconnected**



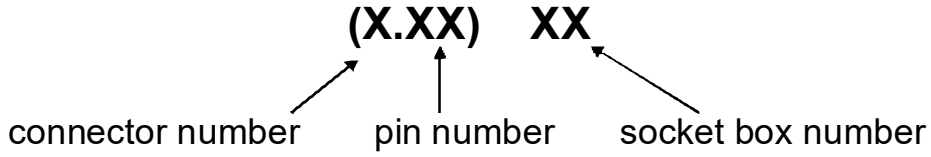
Note: this eliminates any internal control module splices (power or ground from each other), therefore circuits need to be tested individually



221 AIRmatic Connector and Socket Box Pin Assignments

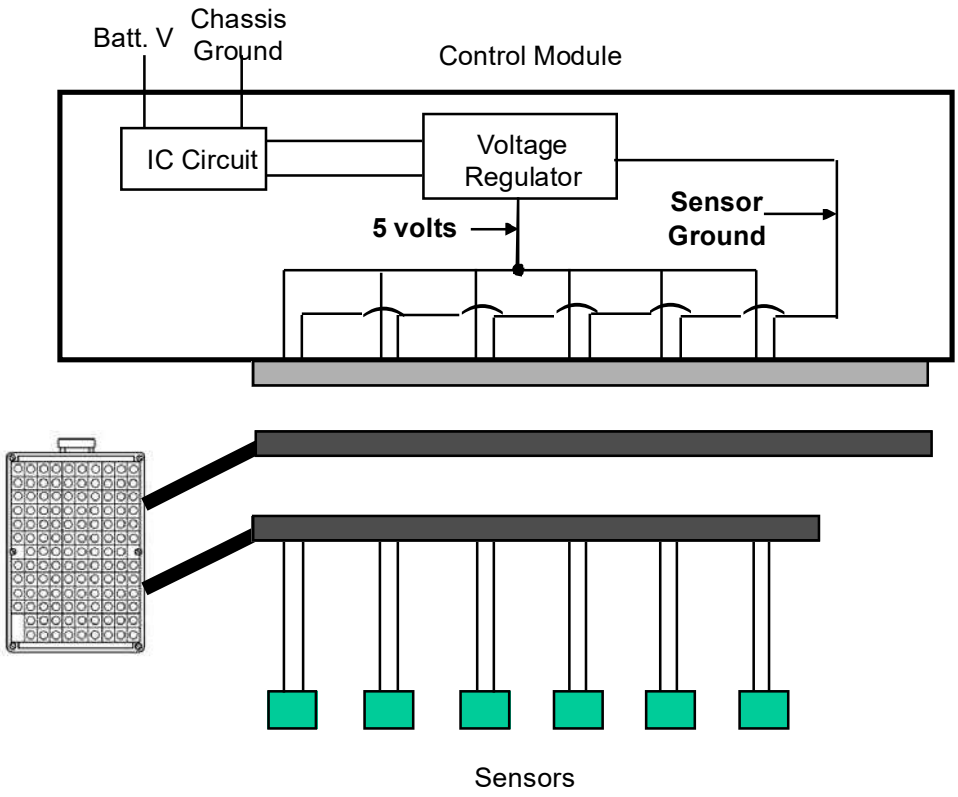
Component	5 Volt Supply	Sensor Grnd	Signal
RF Level Sensor	(2.3) 37	(2.30) 64	(2.40) 74
LF Level Sensor	(2.27) 61	(2.6) 40	(2.38) 72
Rear Level Sensor	(1.27) 27	(1.24) 24	(1.25) 25
RF Body Accel Sensor	(2.2) 36	(2.5) 39	(2.17) 51
LF Body Accel Sensor	(2.26) 60	(2.29) 63	(2.20) 54
Rear Body Accel Sensor	(1.14) 14	(1.10) 10	(1.12) 12
PSI Sensor	(2.31) 65	(2.9) 43	(2.7) 41
Chassis Ground		(2.21) 55	

Note: not all vehicles have a rear body acceleration sensor

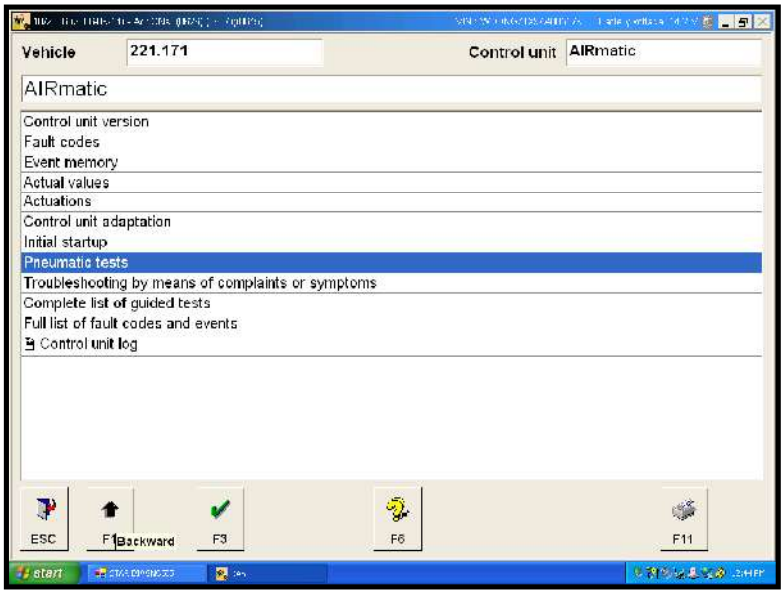


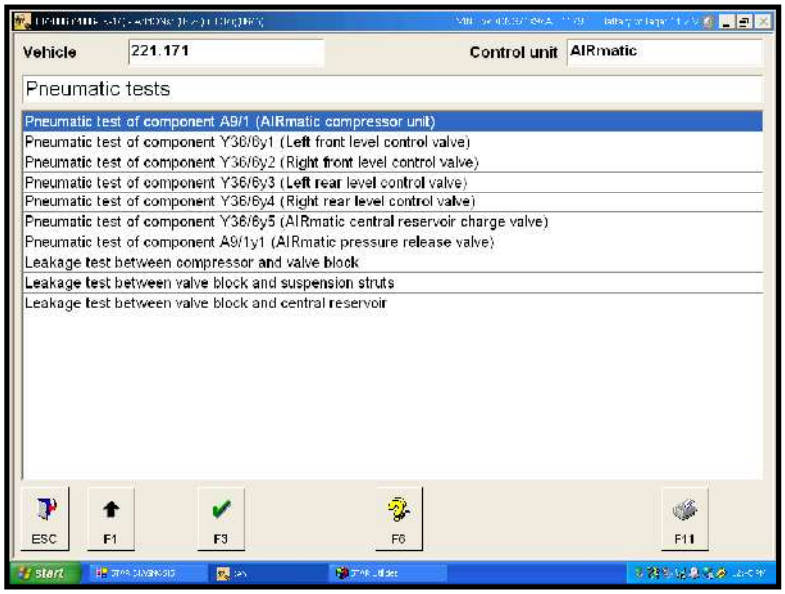
Diagnostic Example
5V Sensor Supply Voltage Short to Ground

- With control module disconnected, test resistance of individual sensor supply voltage pins at the socket box to both chassis ground and the their respective sensor ground pins
- Once you identify the sensor/circuit the problem is on, disconnect the sensor to determine if problem is internal in sensor or if it is a wiring issue
- If the sensor and wiring test OK, the control module is suspect



Pneumatic Tests

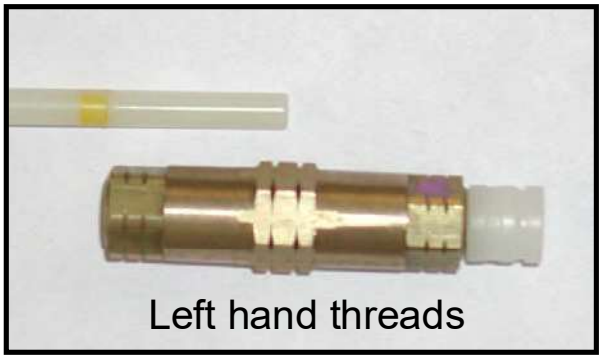




- SDS/DAS include pneumatic tests for most AIRmatic and rear load leveling systems
- These tests include both component function and leakage tests

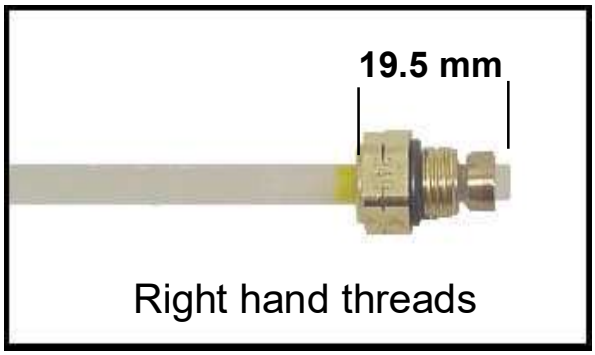
AIRmatic Line Repair Kit

Inline repair kits



A 000 327 01 69

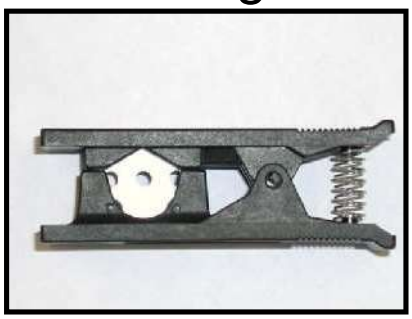
Strut end repair kits



A 000 327 00 69

Warning: Do not repair any line connected to the front air struts.

Line cutting knife



A 000 589 12 28 00