



## AIRBAG

150 - 500

## AIR BAG - DESCRIPTION

The vehicle is equipped with an electronic control system that governs the activation of specific containment devices in the event of frontal impact.

An electronic control unit manages the entire system.

The frontal protection system includes:

- Driver and passenger front air bags with two-stage activation;
- driver and passenger front pretensioners with dual retaining action.

The front protection system features new Air Bag Smart 2 activation software that automatically adapts activation parameters according to impact severity.

Driver and passenger front air bags feature two-stage activation:

- when the impact is of moderate severity, the electronic control unit controls the air bag first activation stage and then the second stage after a certain delay to ensure that the energy discharged onto the occupant is not harmful;
- for very severe crashes, the control unit activates the first and second stage with a very slight delay in order to absorb the occupant's greater kinetic energy before he strikes the steering wheel or dashboard.

The control unit is located under the centre console and is securely fastened to the body: in this way the deceleration sensors located inside the unit are near the centre of gravity and accurately detect the deceleration for the entire vehicle.

The driver's air bag module is located in the middle of the steering wheel. It is fitted on a rocker plate that is also used to control the horns. The plate houses a metal container that contains the folded bag and the gas generation device that inflates the bag.

A clock spring allows the connecting cables for the air bag module to follow the rotation of the steering wheel without danger of breaking.

The passenger air bag is located on the dashboard, and is fastened directly to the vehicle crossmember by means of a special bracket.

The driver and passenger front pretensioners with dual retaining action are integrated respectively in the seat belt reel and in the third point mounting for the actual seat belts (pyrotechnic pretensioners) near the area of the kick plate. Their simultaneous activation is designed to take up slack in the seat belt to ensure it holds the occupant against the backrest from the first moments of impact, thus reducing movement inside the passenger compartment.

The seat belts are also equipped with a load limiter which makes it possible to adjust the force acting on one's chest and shoulders during the retaining action of the belts in the case of a frontal impact.

The control unit is equipped with a self-diagnostic function:

- it detects and memorises any faults;
- it recognises the various components and the fault type;
- it indicates the onset of faults by means of the special warning light.

The activation of the system following a particularly serious impact is memorised by the control unit.

This vehicle has not been fitted with an inertia switch; instead it has a fuel cut off function, which is managed by the Air Bag control unit. After detecting an impact, the Air Bag control unit sends the FPS (Fire Prevention System) signal over the network which:

- interrupts the flow of fuel by the engine management control unit;

See E5030 PETROL ENGINES ELECTRONIC MANAGEMENT

See E5031 DESCRIPTION OF LPG FUEL SYSTEM ELECTRONIC MANAGEMENT

- activates the hazard warning lights;

See E2020 DIRECTION INDICATORS / HAZARD WARNING LIGHTS

- activates the front courtesy light for 15 minutes;

See E2510 COURTESY LIGHTS

- unlocks the doors.

See E3040 CENTRAL LOCKING

When the system self-diagnosis function detects a fault or an impact is recorded, the control unit sends a signal, through the CAN, for the activation of the Air Bag fault warning light located in the instrument panel.

Similarly, the passenger side air bag disabling warning light is lit up.

The front passenger air bag can be deactivated following the specific instructions from the multifunction display using the buttons on the right of the instrument panel.



The passenger Air Bag disabling function is activated, using the dedicated buttons to the right of the instrument panel, in the set up menu in the actual panel, not using the key!! When it is deactivated the warning light in the instrument panel comes on.

For more details,

See descriptions 5580C AIR BAG SYSTEM

The system control unit supply line is protected by a dedicated Body Computer fuse.



When operations are carried out to the Air Bag system, the following safety recommendations must be closely followed. For more details,

Op. 5580C AIR BAG SYSTEM

## AIR BAG - FUNCTIONAL DESCRIPTION

The control unit for the Air Bag system M060 receives a supply controlled by the ignition (INT) at pin 2 of connector A from the line protected by fuse F50 of the Body Computer M001 (pin 3 of connector E).

Pin 1 connector A of M060 is connected to the specific earth C050A.

When, according to its control logic and to the data coming from the sensors incorporated into the actual control unit, a slight frontal impact is detected, the control unit M060 sends control signals for the intervention of the front modules in the first stage; specifically:

- to driver air bag Q009, via the clock spring coupling on steering wheel D047 (pins 11 and 12), from pins 15 (positive) and 16 (earth) of connector A;
- to the passenger side air bag Q011, from pins 13 (earth) and 14 (positive) of connector A;
- to the front pretensioners on the reels (centre pillars) driver's side Q020A, from pins 15 (earth) and 16 (positive) of connector B, and passenger side Q021A, from pins 13 (positive) and 14 (earth) of the same connector;
- to the front pretensioners on the seat belt mounting (3rd point) driver's side Q020B, from pins 11 (earth) and 12 (positive) of connector B, and passenger side Q021B, from pins 9 (positive) and 10 (earth) of the same connector.

If a more serious frontal impact is detected, the control unit M060 sends signals for the intervention of the front modules in the second stage; specifically:

- to the driver's air bag Q009, via the clock spring contact on the steering wheel D047 (pins 9 and 10), from pins 19 (positive) and 20 (earth) of connector A;
- to the passenger side air bag Q011, from pins 17 (earth) and 18 (positive) of connector A.

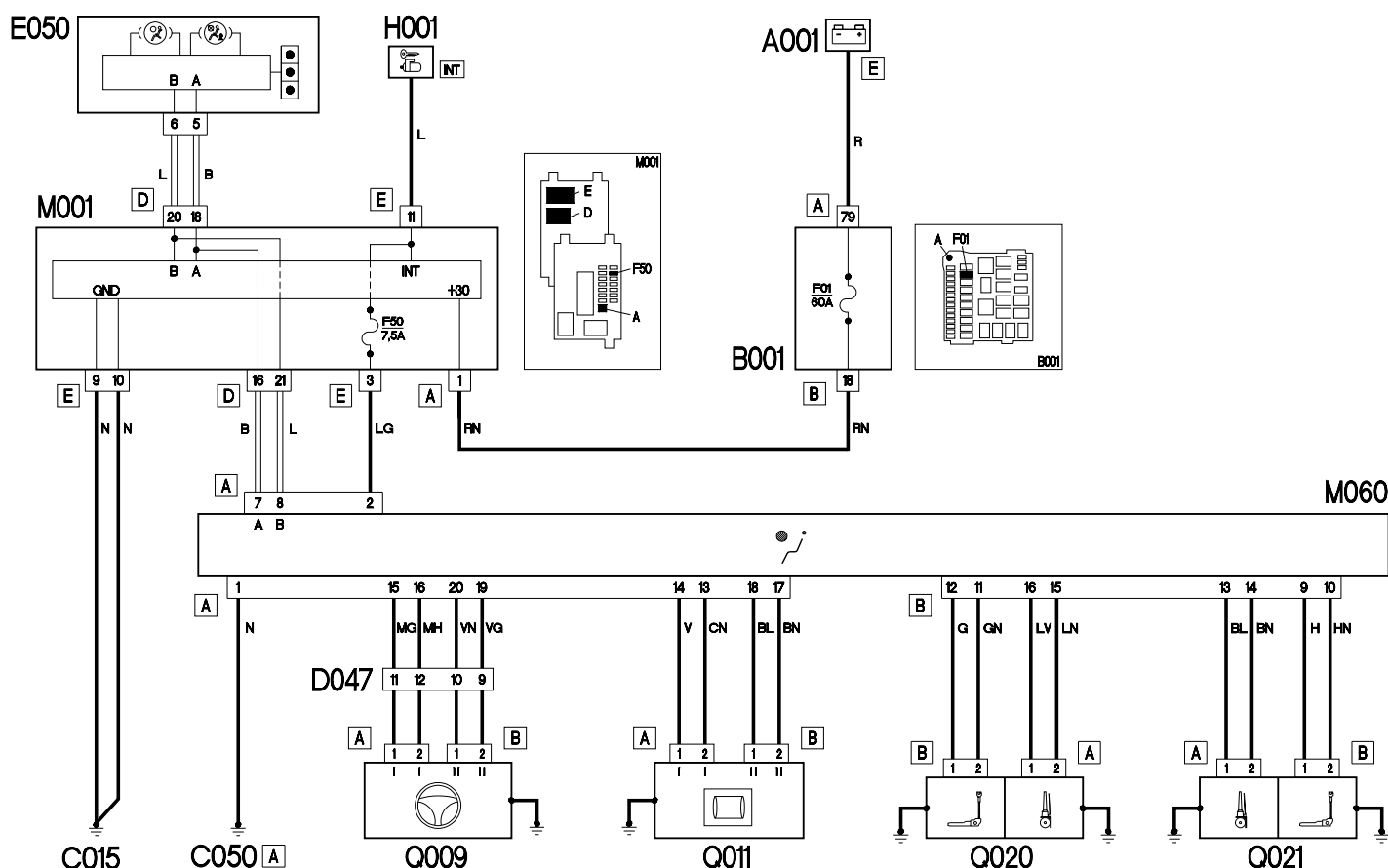
The control unit M060 (pins 7 and 8 of connector A) is connected, via the B-CAN line, to the Body Computer M001 and to the instrument panel E050.

When the system self-diagnosis function detects a fault or an impact is recorded, the control unit M060 sends a signal, through the CAN, for the activation of the Air Bag fault warning light located in the instrument panel E050.

After having detected an impact, control unit M060 sends the FPS signal (Fire Prevention System) via the network. This condition is also signalled at instrument panel E050 via the general failure warning light and a dedicated message in the display.

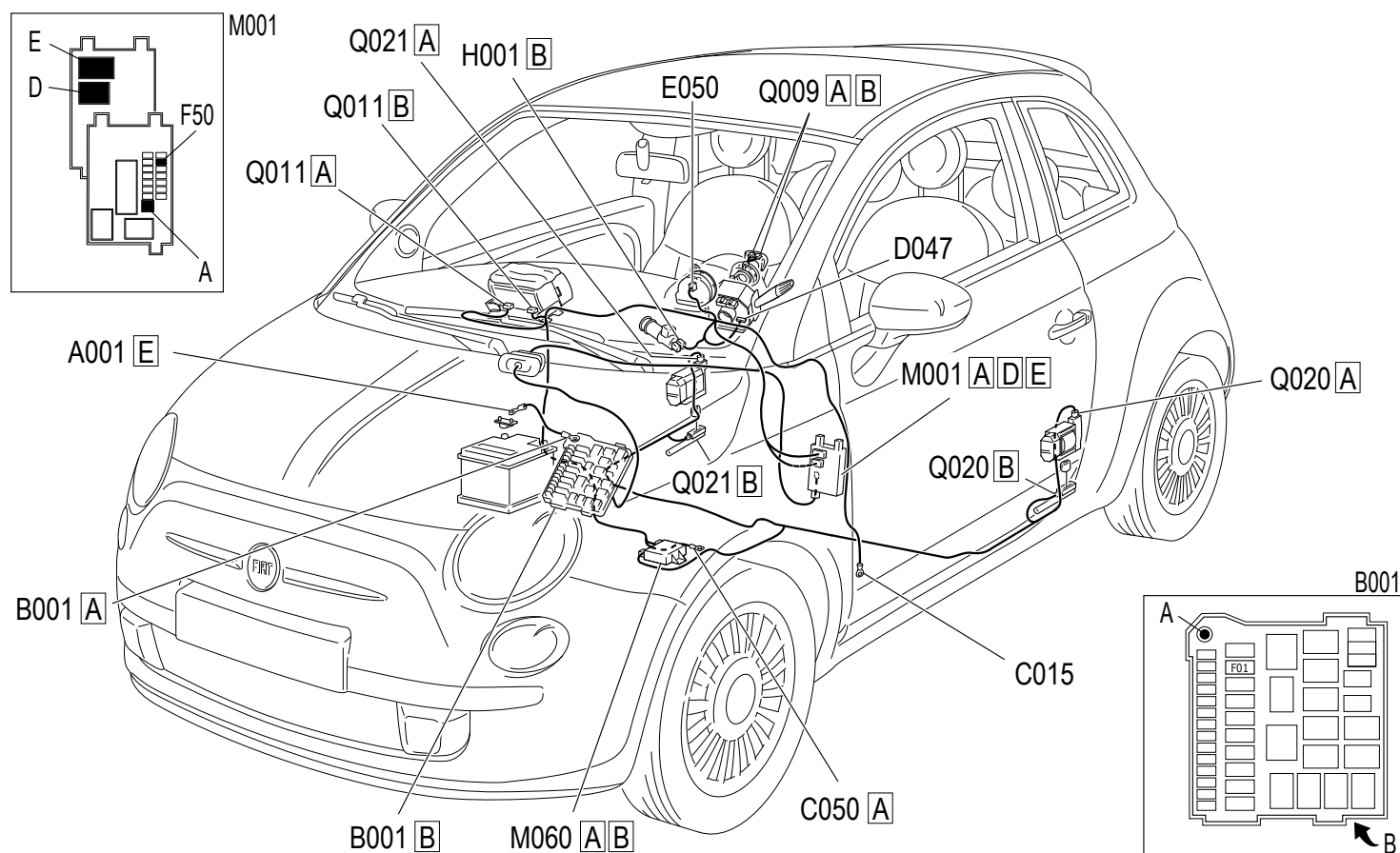
It is possible, using the buttons to the right of the instrument panel, to deactivate the front passenger air bag via the dedicated set up menu in the instrument panel display which causes the warning light to come on.

# AIR BAG - WIRING DIAGRAM



Component code	Description	Reference to the Operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
C050	AIR BAG SYSTEM EARTH	-
D047	CLOCK SPRING COUPLING	Op. 5580C12 CLOCK SPRING FOR AIR BAG MODULE ON STEERING WHEEL - R.R
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M060	AIR BAG CONTROL UNIT	Op. 5580C14 AIR BAG ECU - R+R
Q009	DRIVER'S AIR BAG	Op. 5580C18 AIR BAG MODULE - R+R
Q011	AIR BAG IN DASHBOARD (PASSENGER SIDE)	Op. 5580C22 AIR BAG MODULE - PASSENGER SIDE - R.R
Q020	DRIVER'S FRONT SEAT BELT PRETENSIONER	Op. 7065A12 FRONT SEAT BELT (ONE), LEFT OR RIGHT, WITH PRETENSIONER ON REEL - R.R. Op. 7065A13 PRETENSIONER FOR LUMBAR BRANCH OF ONE SEAT BELT, LEFT OR RIGHT - R.R.
Q021	PASSENGER SIDE FRONT SEAT BELT PRETENSIONER	Op. 7065A12 FRONT SEAT BELT (ONE), LEFT OR RIGHT, WITH PRETENSIONER ON REEL - R.R. Op. 7065A13 PRETENSIONER FOR LUMBAR BRANCH OF ONE SEAT BELT, LEFT OR RIGHT - R.R.

# AIR BAG - COMPONENT LOCATION



Component code	Description	Reference to the Operation
A001	BATTERY	Op. 5530B10 BATTERY - R+R
B001	JUNCTION UNIT	Op. 5505A10 JUNCTION UNIT - R+R
C015	DASHBOARD EARTH, DRIVER'S SIDE	-
C050	AIR BAG SYSTEM EARTH	-
D047	CLOCK SPRING COUPLING	Op. 5580C12 CLOCK SPRING FOR AIR BAG MODULE ON STEERING WHEEL - R.R
E050	INSTRUMENT PANEL	Op. 5560B10 CONTROL PANEL - R+R
H001	IGNITION SWITCH	Op. 5520A10 IGNITION SWITCH ASSEMBLY - R+R
M001	BODY COMPUTER	Op. 5505A32 BODY COMPUTER - R.R
M060	AIR BAG CONTROL UNIT	Op. 5580C14 AIR BAG ECU - R+R
Q009	DRIVER'S AIR BAG	Op. 5580C18 AIR BAG MODULE - R+R
Q011	AIR BAG IN DASHBOARD (PASSENGER SIDE)	Op. 5580C22 AIR BAG MODULE - PASSENGER SIDE - R.R
Q020	DRIVER'S FRONT SEAT BELT PRETENSIONER	Op. 7065A12 FRONT SEAT BELT (ONE), LEFT OR RIGHT, WITH PRETENSIONER ON REEL - R.R. Op. 7065A13 PRETENSIONER FOR LUMBAR BRANCH OF ONE SEAT BELT, LEFT OR RIGHT - R.R.
Q021	PASSENGER SIDE FRONT SEAT BELT PRETENSIONER	Op. 7065A12 FRONT SEAT BELT (ONE), LEFT OR RIGHT, WITH PRETENSIONER ON REEL - R.R. Op. 7065A13 PRETENSIONER FOR LUMBAR BRANCH OF ONE SEAT BELT, LEFT OR RIGHT - R.R.