



AIRBAG

290/295 - Ducato FL 2014

AIRBAG - DESCRIPTION

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

An electronic control unit, fitted on the centre tunnel in the passenger compartment, manages the entire system.



The Air Bag control unit (NAB) connectors differ depending on the version. This is necessary to prevent fitting an incorrect control unit from the Spare Parts Dept. (foolproof logic).

In the most complete configuration the protection system includes:

- Driver side front airbag with single stage of activation;
- Passenger side front airbag with single stage of activation;
- Side Bags;
- Window Bags;
- side impact detection sensors;
- front belts with pretensioner and load limiter;
- seat belt not fastened sensor (driver's side only).

The side impact sensors, located in the doors, make it possible to manage the activation logic of the side protection systems (Side Bags and Window Bags).

The electronic control unit is located in the central tunnel and is fixed rigidly to the body: in this way the deceleration sensors located inside it are near the centre of gravity and accurately detect the deceleration of the entire car.

The driver's airbag 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 airbag 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 Side Bags are incorporated directly into the seats, located in a special housing on the outside of the backrests.

The Window Bags are made up of two bags, one on the right side and one on the left side of the vehicle, housed behind the roof side linings and covered by special trims.

The pretensioners are applied to the buckles and then the shell of the seat to obtain an additional restraining function in conjunction with the seat structure.

The protective action of the belts is made more effective by the adoption of these pretensioners which, in the case of a violent impact, rewind the seat belt by a few centimetres to ensure optimum adherence to the occupant's body.

The pretensioners can only be used once and it is possible to tell that they have been activated by the retraction of the buckle downwards making it impossible to operate the belt.

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 vehicle is equipped with a S.B.R. (Seat Belt Reminder) system consisting of a buzzer that notifies the driver that their seat belt is unfastened complemented by a flashing seat belt unfastened warning light in the instrument panel.

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 dedicated warning lights.

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

When the system self-diagnostic function detects a fault or an impact is recorded, the control unit sends a signal, via the CAN, for the "airbag failure" and "general failure" warning light located in the instrument panel.

The passenger airbag (if present) can be deactivated using the specific adjustments via the multifunction display and using the "MODE", "+" and "-" buttons on the left control panel.



The passenger airbag disabling function is activated via the setup menu in the instrument panel, not using the key! When deactivated, the LED on the dedicated button located on the central control panel stays on.

For more details,

See descriptions 5580C AIR BAG SYSTEM

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

AIRBAG - FUNCTIONAL DESCRIPTION

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

Pin 1 of connector B is connected to the Air Bag earth C050 (connector A).

The sensor for the driver's Side Bag K066, is connected to pin 2 (signal) and 4 (reference earth) of connector B of the Air Bag control unit M060, whilst the sensor for the passenger Side Bag K067 is connected to pin 1 (signal) and 3 (reference earth) of connector B of M060.

Depending on the severity and type of the impact, the control unit activates:

- the driver's Air Bag Q009 which, via the clock spring on the steering wheel D047 (pins 9 and 10), is connected to the Air Bag control unit, respectively at pins 22 (+) and 21 (-) of connector A;
- the passenger Air Bag Q011, connected to pins 23 (+) and 24 (-) of connector A;
- the driver's Side Bag Q030, connected to pins 15 (+) and 16 (-) of connector B;
- the passenger Side Bag Q031, connected to pins 14 (+) and 13 (-) of connector B;
- the driver's Window Bag Q040, connected to pins 19 (+) and 20 (-) of connector B;
- the passenger Window Bag Q041, connected to pins 18 (+) and 17 (-) of connector B;
- the driver's front seat belt pretensioners Q020, connected to pins 23 (+) and 24 (-) of connector B and passenger side Q021, connected to pins 22 (+) and 21 (-) of the same connector.

The cases of the Side Bag are connected to the Air Bag earth C050 (connector B).

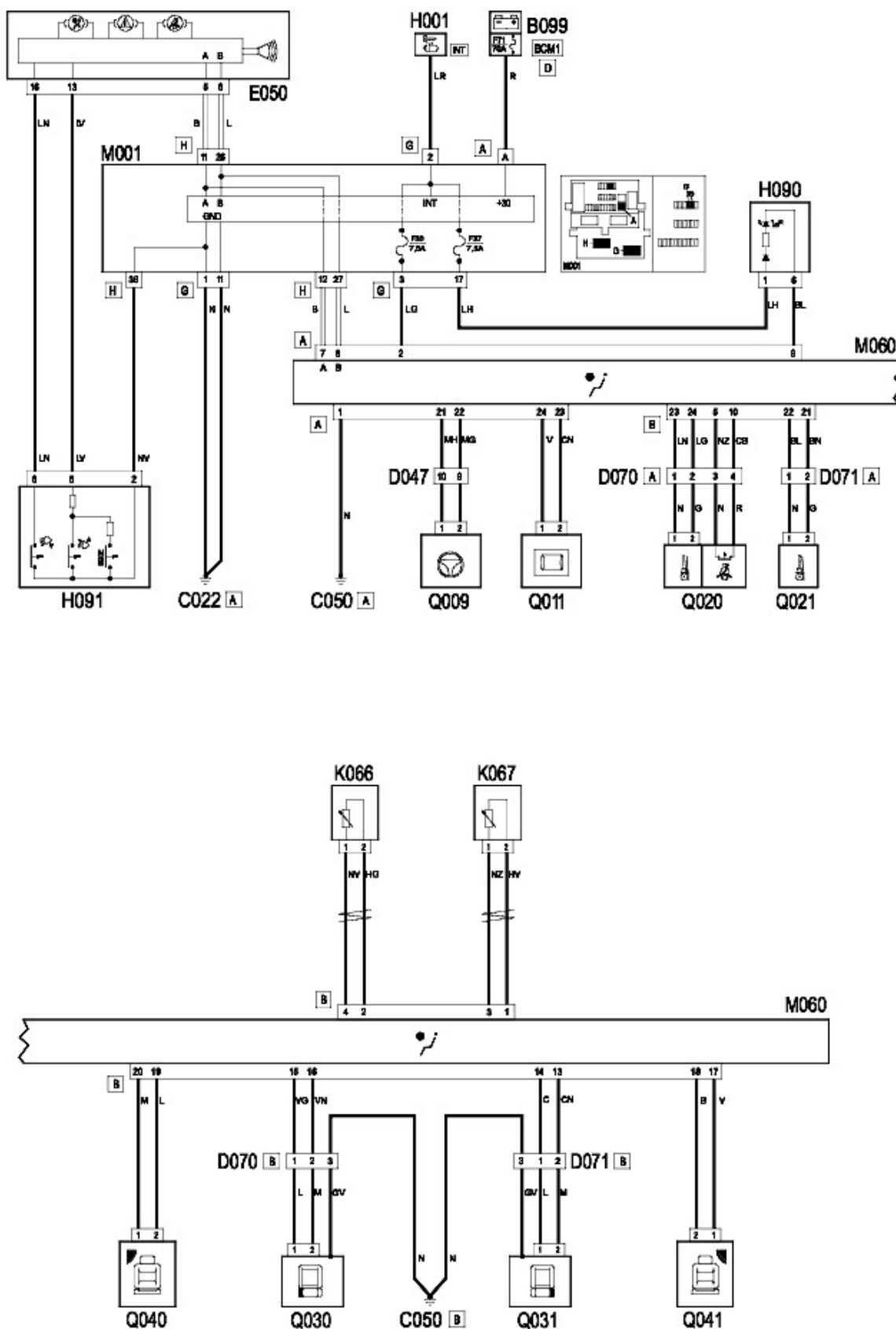
The Air Bag control unit M060 receives the signal coming from the driver's seat belt switch incorporated in the pretensioner Q020 at pin 10 of connector B. Connector B provides an earth reference for the switch from pin 5.

The control unit M060 is connected, via the CAN line (pins 7 and 8 of connector A), to the Body Computer M001 (pin 12 and 27 connector H) and to the instrument panel E050 for the management of the "Airbag failure" and "General" warning lights and the buzzer.

The "Mode", "+" and "-" controls (pins 5 and 6) located in the left control panel H091 send analogue signals to the instrument panel E050 (pins 13 and 16). Pin 2 of H091 receives the reference earth from pin 36 of connector H of the Body Computer M001. This allows the deactivation of the passenger airbag, via the special set-up menu on the instrument panel display, causing the LED on the dedicated button in the central control panel H090 to switch on.

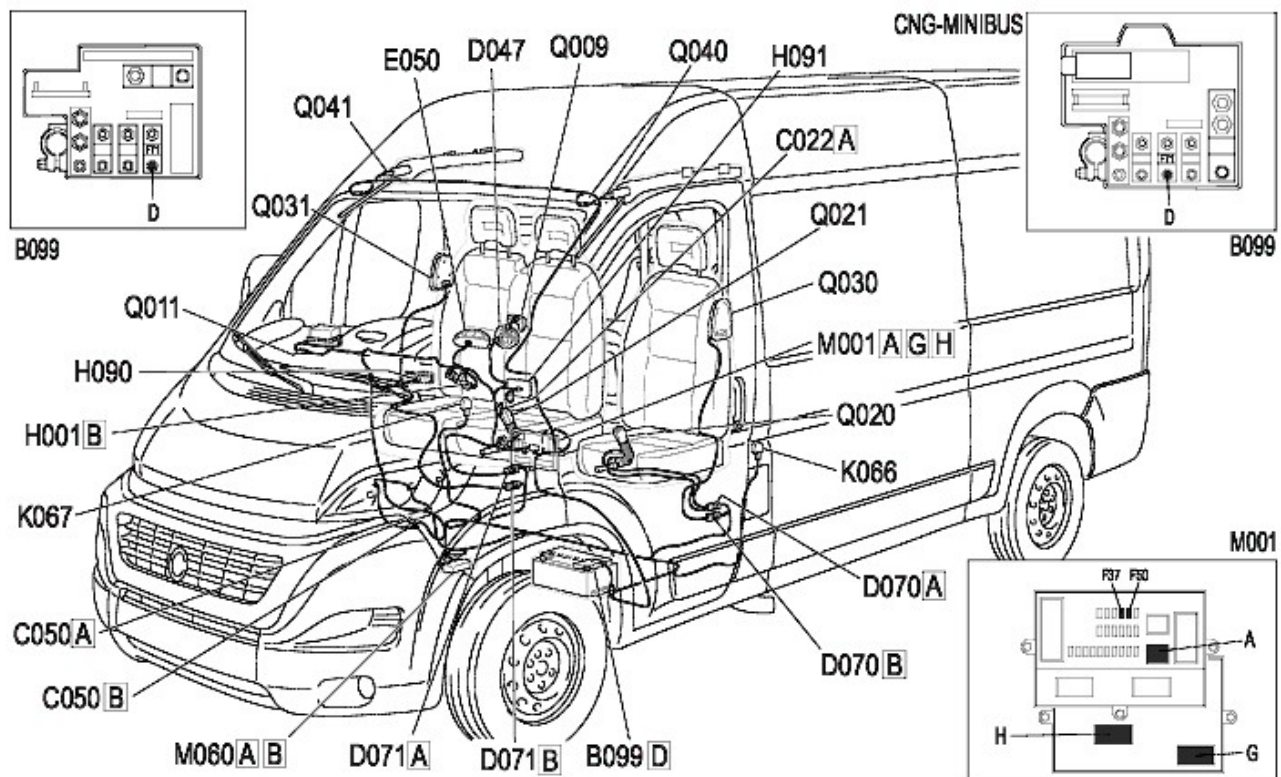
Central control panel H090 receives an ignition-operated power supply (INT) at pin 1 from the line protected by fuse F37 of the Body Computer M001 (connector G pin 17), while at pin 6 it receives, from control unit M060 (pin 9 connector A), a negative signal which activates the "passenger airbag deactivated" LED, located on the button on the panel itself.

AIRBAG - WIRING DIAGRAM



Component code	Name	Assembly reference
B099	MAXI FUSE BOX ON BATTERY	Op. 5530B BATTERY AND LEADS
C022	Centre dashboard earth	-
C050	AIR BAG SYSTEM EARTH	-
D047	CLOCK SPRING COUPLING	Op. 5580C AIR BAG SYSTEM
D070	DRIVER'S SEAT COUPLING	-
D071	PASSENGER SEAT COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B ANALOGUE CONTROL PANEL
H001	IGNITION SWITCH	Op. 5520A IGNITION SWITCH
H090	SWITCH CONTROL PANEL	
H091	LEFT CONTROL UNIT	Op. 7040A PASSENGER COMPARTMENT TRIMS
K066	SIDE BAG SENSOR, DRIVER'S SIDE	Op. 5580C AIR BAG SYSTEM
K067	SIDE BAG SENSOR, PASSENGER SIDE	Op. 5580C AIR BAG SYSTEM
M001	BODY COMPUTER	Op. 5505A MULTI-FUNCTION COMPONENTS
M060	AIR BAG CONTROL UNIT	Op. 5580C AIR BAG SYSTEM
Q009	DRIVER'S AIR BAG	Op. 5580C AIR BAG SYSTEM
Q011	AIR BAG IN DASHBOARD (PASSENGER SIDE)	Op. 5580C AIR BAG SYSTEM
Q020	DRIVER'S FRONT SEAT BELT PRETENSIONER	Op. 7065A FRONT SEAT BELTS
Q021	PASSENGER SIDE FRONT SEAT BELT PRETENSIONER	Op. 7065A FRONT SEAT BELTS
Q030	DRIVER'S SIDE BAG	Op. 5580C AIR BAG SYSTEM
Q031	PASSENGER SIDE BAG	Op. 5580C AIR BAG SYSTEM
Q040	DRIVER'S HEAD BAG	Op. 5580C AIR BAG SYSTEM
Q041	PASSENGER HEAD BAG	Op. 5580C AIR BAG SYSTEM

AIRBAG - COMPONENT LOCATION



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B099	MAXI FUSE BOX ON BATTERY	Op. 5530B BATTERY AND LEADS
C022	Centre dashboard earth	-
C050	AIR BAG SYSTEM EARTH	-
D047	CLOCK SPRING COUPLING	Op. 5580C AIR BAG SYSTEM
D070	DRIVER'S SEAT COUPLING	-
D071	PASSENGER SEAT COUPLING	-
E050	INSTRUMENT PANEL	Op. 5560B ANALOGUE CONTROL PANEL
H001	IGNITION SWITCH	Op. 5520A IGNITION SWITCH
H090	SWITCH CONTROL PANEL	
H091	LEFT CONTROL UNIT	Op. 7040A PASSENGER COMPARTMENT TRIMS
K066	SIDE BAG SENSOR, DRIVER'S SIDE	Op. 5580C AIR BAG SYSTEM
K067	SIDE BAG SENSOR, PASSENGER SIDE	Op. 5580C AIR BAG SYSTEM
M001	BODY COMPUTER	Op. 5505A MULTI-FUNCTION COMPONENTS
M060	AIR BAG CONTROL UNIT	Op. 5580C AIR BAG SYSTEM
Q009	DRIVER'S AIR BAG	Op. 5580C AIR BAG SYSTEM
Q011	AIR BAG IN DASHBOARD (PASSENGER SIDE)	Op. 5580C AIR BAG SYSTEM
Q020	DRIVER'S FRONT SEAT BELT PRETENSIONER	Op. 7065A FRONT SEAT BELTS
Q021	PASSENGER SIDE FRONT SEAT BELT PRETENSIONER	Op. 7065A FRONT SEAT BELTS
Q030	DRIVER'S SIDE BAG	Op. 5580C AIR BAG SYSTEM
Q031	PASSENGER SIDE BAG	Op. 5580C AIR BAG SYSTEM
Q040	DRIVER'S HEAD BAG	Op. 5580C AIR BAG SYSTEM
Q041	PASSENGER HEAD BAG	Op. 5580C AIR BAG SYSTEM