

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

2008-11 ENGINE

Fuel System - 204.081 C 280/300 4MATIC

GENERAL INFORMATION

GENERAL NOTES: PASSENGER CARS: FUEL SYSTEM - AH47.00-Z-9999AZ

MODEL all

Information on fuel gage sensor	MODEL 203, 209...	AH47.10-P-7000-02A
Information on fuel level sensor	MODEL 219.322 with ENGINE 642	AH47.10-P-7000-02TQ
Information on fuel level sensor	MODEL 211 with ENGINE 642	AH47.10-P-7000-02TI

BASIC KNOWLEDGE

COMPONENT DESCRIPTION FOR THE FUEL TANK - GF47.10-P-2000CY

MODEL 204.0 with ENGINE 272.911 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.921 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.947 up to Model Year 8

MODEL 204.0 with ENGINE 272.948 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.961 up to Model Year 8

MODEL 204.0 with ENGINE 272.971 up to Model Year 8

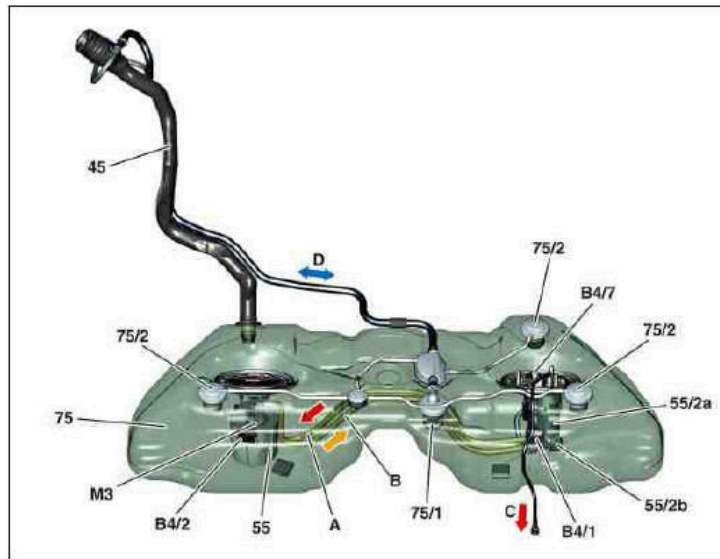
Except code 494 USA version

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

- 45 Fuel filler neck
- 55 Fuel delivery module
- 55/2a Fuel filter
- 55/2B Fuel pressure regulator
- 75 Fuel tank
- 75/1 Refueling, limiting and bleed valve
- 75/2 Breather valve

- B4/1 Left fuel level indicator sensor
- B4/2 Right fuel level indicator sensor
- B4/7 Fuel pressure sensor
- M3 Fuel pump



P47.10-2411-76

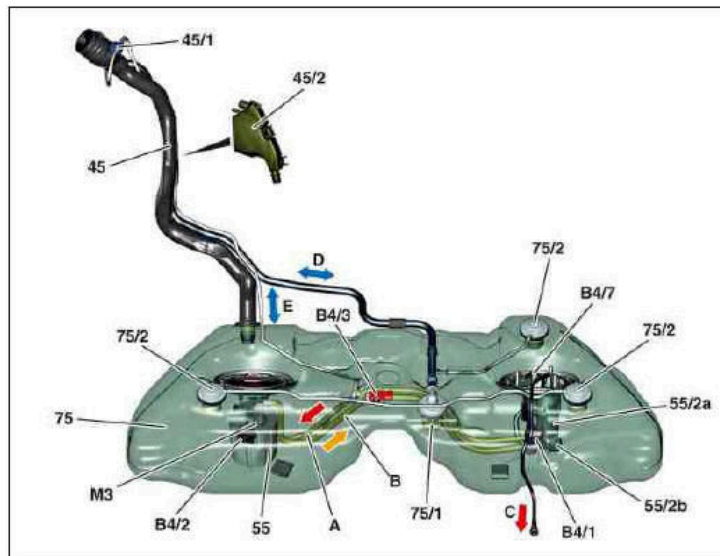
- A Fuel feed to the fuel filter
- B Fuel return from fuel pressure regulator
- C Fuel to fuel rail
- D Aeration and venting of the fuel tank (operational and refueling ventilation)

Fig. 1: Identifying Fuel Tank Components - Except Code 494 USA Version
 Courtesy of MERCEDES-BENZ USA

With code 494 USA version

- 45 Fuel filler neck
- 45/1 Operating venting shutoff valve
- 45/2 Bubble section (in the refueling vent line)
- 55 Fuel delivery module
- 55/2a Fuel filter
- 55/2B Fuel pressure regulator
- 75 Fuel tank
- 75/1 Refueling, limiting and bleed valve
- 75/2 Breather valve

- B4/1 Left fuel level indicator sensor
- B4/2 Right fuel level indicator sensor
- B4/3 Fuel tank pressure sensor
- B4/7 Fuel pressure sensor
- M3 Fuel pump



P47.10-2408-76

- A Fuel feed to the fuel filter
- B Fuel return from fuel pressure regulator
- C Fuel to fuel rail
- D Refueling venting
- E Aeration and venting of the fuel tank (operational venting)

Fig. 2: Identifying Fuel Tank Components - With Code 494 USA Version

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

Courtesy of MERCEDES-BENZ USA

Location

The saddle-shaped fuel tank with a fill quantity of around 66 liters is located on the underbody in front of the rear axle.

Design

The fuel tank consists of a two-layered, very stiff plastic (HDPE - high density polyethylene). Due to the "U"-shaped cut-out, the fuel tank is divided into two interconnected chambers.

Aeration and ventilation of the fuel tank (operational ventilation) takes place via the breather valves and the activated charcoal filter. Aeration of the fuel tank during refueling takes place via the refueling, limiting and bleed valve. The refueling limiting valve also prevents overfilling by closing the vent line.

Rollover valves are integrated above in the breather valves which close off the aeration and ventilation system for a rollover in order to prevent fuel escaping.

The fuel pump is built into the fuel feed module.

Each fuel tank chamber contains a fuel level indicator sensor for detection of the fuel level.

Emptying

The fuel tank has no outlet valves. Emptying is done by the tanking service or by using a suitable extractor system.

Tanking service

The fuel tank can be emptied via the fuel pump control unit (N118) without the engine running.

The tanking service must be called up for this using the DAS and the following parameters entered:

- Parameter 01 for "fuel pump ON"
- Time "0-99999" seconds
- Duty cycle of the PWM signal (pulse width modulated signal) up to 100%

During emptying the DAS must be connected and the ignition must remain switched on.

Function

The fuel supply is controlled and monitored by the ME-SFI [ME] control unit (N3/10) and the fuel pump control unit (N118). The fuel delivery performance is regulated variably from 0 to 130 l/h for a fuel pressure of 3.8 bar according to fuel requirements.

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

A fuel strainer (as fuel prefilter) and a suction jet pump (for removing fuel from the right fuel tank chamber) is attached below at the feed point to the fuel pump.

The fuel pump suctions the fuel through the fuel strainer out of the fuel feed module and via the suction jet pump out of the right fuel tank chamber. The fuel pump then pumps the suctioned fuel via the check valve and fuel filter to the fuel manifold (single line system). In doing so the fuel pressure is limited by the pressure limiting valve to approx. 3.8 bar.

At the feed point to the fuel filter there is a check valve which prevents dropping of the fuel pressure when the fuel pump is switched off.

The fuel return from the fuel pressure regulator supplies the suction jet pump in the left fuel tank chamber with fuel. This suction jet pump delivers the fuel out of the left fuel tank chamber into the fuel feed module (right fuel tank chamber).

The housing of the fuel delivery module serves as a swirl pot.

While cornering when the fuel level is low, the swirl pot prevents the fuel pump from drawing in air.

For USA version

The fuel tank has a separate operating and refueling venting mode as well as the fuel tank pressure sensor.

COMPONENT DESCRIPTION OF THE FUEL LEVEL SENSOR - GF47.10-P-2010CY

MODEL 204.0 with ENGINE 272.911 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.921 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.947 up to Model Year 8

MODEL 204.0 with ENGINE 272.948 up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.961 up to Model Year 8

MODEL 204.0 with ENGINE 272.971 up to Model Year 8

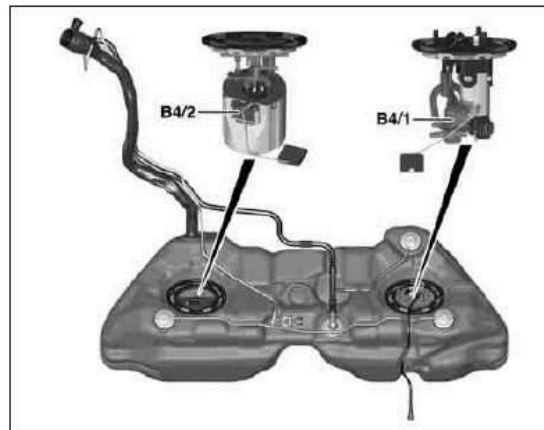
Location

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

B4/1 Left fuel level indicator sensor
B4/2 Right fuel level indicator sensor

One fuel level sensor is mounted in each fuel tank chamber.



P47.50-2061-11

Fig. 3: Locating Fuel Level Indicator Sensors
Courtesy of MERCEDES-BENZ USA

Design

The fuel level sensor consists of:

- Lever
- Float
- Double potentiometer (two sliding contacts)

Both sliding contacts of the double potentiometer are switched in parallel.

Function

The float changes the position of the lever (with the double potentiometer) in line with the fuel level. This changes the resistance value of the double potentiometer and thereby influences the output voltage, which is a measure for the fuel level.

Voltage signals from both fuel level sensors are transmitted separately to the rear SAM control unit with fuse and relay module (N10/2) which processes the signals accordingly and transmits them to the instrument cluster (A1) via the interior CAN (CAN B).

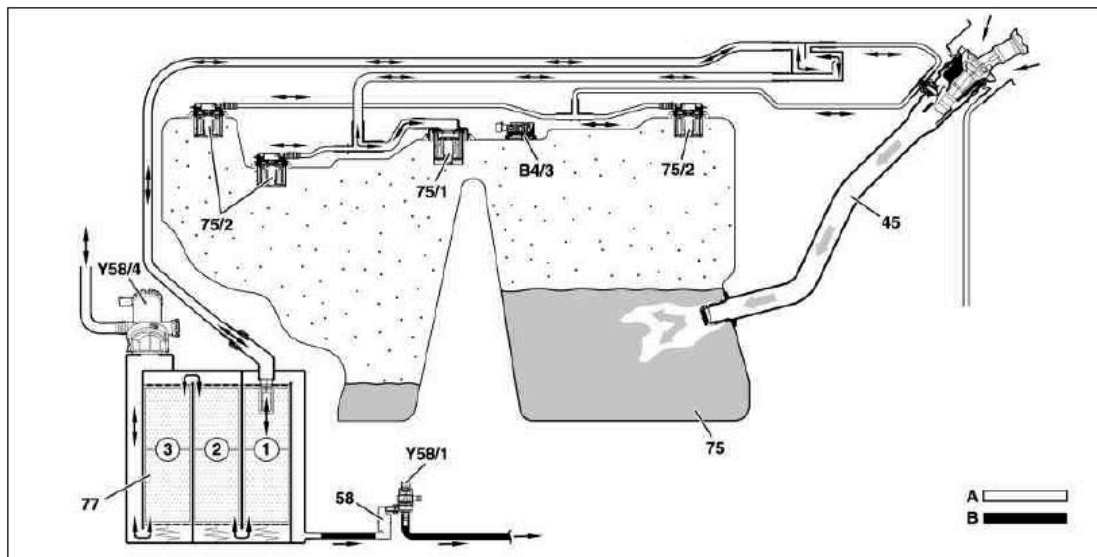
ON-BOARD REFUELING VAPOR RECOVERY FUNCTION - GF47.10-P-3004CY

MODEL 204.0 /2 with ENGINE 272.947 with CODE (494) USA version up to Model Year 8

MODEL 204.0 with ENGINE 272.948 with CODE (494) USA version up to Model Year 8

MODEL 204.0 /2 with ENGINE 272.961 with CODE (494) USA version up to Model Year 8

MODEL 204.0 with ENGINE 272.971 with CODE (494) USA version up to Model Year 8



P47.30-2162-09

- | | | | | | |
|----|--------------------------------------|------|-------------------------------------|-------|---|
| 1 | Activated charcoal filter, chamber 1 | 75 | Fuel tank | B4/3 | Fuel tank pressure sensor |
| 2 | Activated charcoal filter, chamber 2 | 75/1 | Refueling, limiting and bleed valve | Y58/1 | Purge control valve |
| 3 | Activated charcoal filter, chamber 3 | 75/2 | Breather valve | Y58/4 | Activated charcoal filter shutoff valve |
| 45 | Fuel filler neck | 77 | Activated charcoal filter | | |
| 58 | Fluid reservoir | | | | |
- A Aeration line and vent line
B Purge line

Fig. 4: On-Board Refueling Vapor Recovery Function Diagram
 Courtesy of MERCEDES-BENZ USA

The legislator demands:

- Refueling vapors in the vehicle must be recovered (ORVR = Onboard Refueling Vapor Recovery)
- Fuel and refueling gases must be separated in order to prevent fuel from flowing into the activated charcoal filter due to inappropriate refueling or a defective nozzle.

Thanks to its shape, the fuel filler neck functions as a suction jet pump. The fuel out of the nozzle accelerates through this in the filler neck and air is suctioned around the nozzle.

As a result of this air intake (in the fuel tank) around the nozzle, refueling vapors are not able to rise up at the fuel filler neck and escape into the atmosphere.

The refueling gases pass via the breather valve and aeration line and vent lines to the activated charcoal filter, where it is stored.

The refueling, limiting valve and bleed valve also prevents overfilling by closing the aeration and vent line.

When the canister is regenerated (purge control valve actuated), the refueling vapors are drawn off by the engine and burned together with the fuel vapors from the fuel evaporation control system.

Rollover valves are integrated above in breather valves. If fuel passes to the breather valves, these close the aeration line and vent lines to the activated charcoal filter and thus prevents the fuel passing into the activated

2011 Mercedes-Benz C300 Luxury 4Matic

2008-11 ENGINE Fuel System - 204.081 C 280/300 4MATIC

charcoal filter.

Breather valves can also close briefly in cases of powerful braking / accelerating or while cornering.

[i] Stop refueling when the no **zz** le is switched off and the fuel tank is full! On no account overfilling fuel tank as a result of refueling no **zz** le being switched on several times.

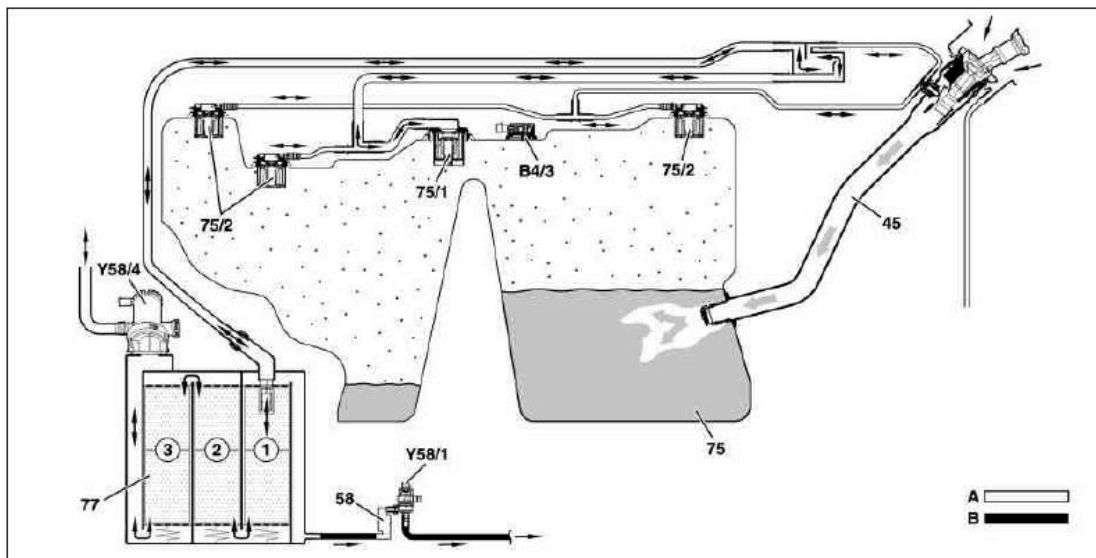
Component description for the fuel tank	75	GF47.10-P-2000CY
Component description for the activated charcoal filter	77	GF47.30-P-2011CY
Component description for the purge control valve	Y58/1	GF47.30-P-2020CY

ON-BOARD REFUELING VAPOR RECOVERY FUNCTION - GF47.10-P-3004MI

MODEL 204.0 /2 with ENGINE 272.9 (except 272.98) as of Model Year 2009 with CODE (494) USA version /AEJ 08

MODEL 204.9, 207.3 /4, 212.0 /2 with ENGINE 272.9 (except 272.98) with CODE (494) USA version

MODEL 207.3 /4, 212.0 /2 with ENGINE 273.9 with CODE (494) USA version



P47.30-2162-09

- | | | |
|---|---------------------------------------|---|
| 1 Activated charcoal canister chamber 1 | 75 Fuel tank | B4/3 Fuel tank pressure sensor |
| 2 Activated charcoal canister chamber 2 | 75/1 Fueling, limiting and vent valve | Y58/1 Purge control valve |
| 3 Activated charcoal canister chamber 3 | 75/2 Breather valve | Y58/4 Activated charcoal filter shutoff valve |
| 45 Fuel filler neck | 77 Activated charcoal canister | |
| 58 Fluid reservoir | | |
-
- | |
|------------------------------------|
| A Air admission line and vent line |
| B Purge line |

Fig. 5: On-Board Refueling Vapor Recovery Function Diagram