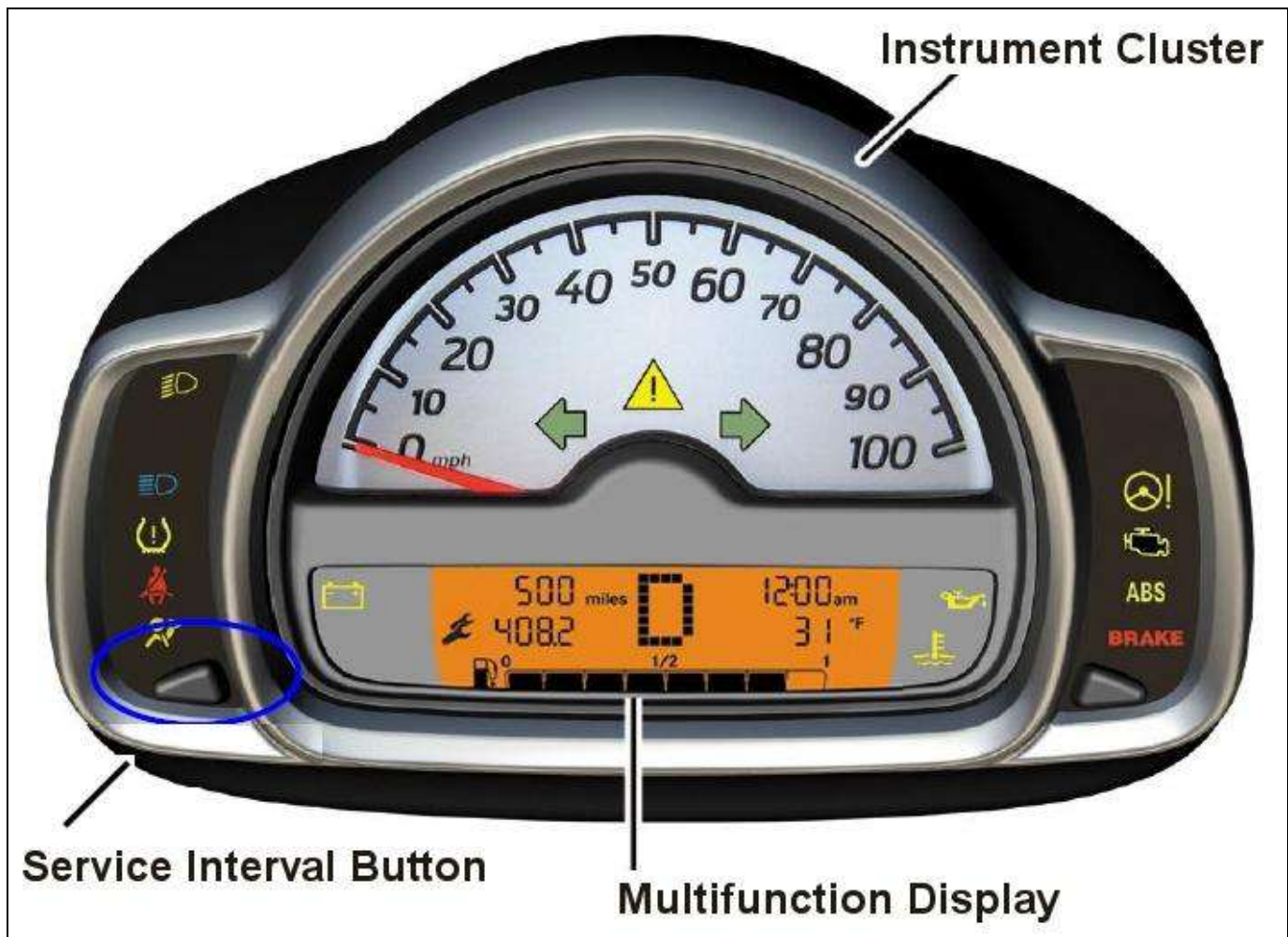


# GENERAL INFORMATION

FLUID CAPACITIES						
Fluid Type	Application	Standard	Metric	Fluid Spec	Note	S/H
Air Cond Refrigerant		N/A	N/A	R-134a refrigerant and a special PAG lubricant oil (never R-12)		S
Brake Fluid		1.05 QTS.	1 L	DOT 4 Brake Fluid		S
Engine Coolant		4.50 QTS.	4.3 L	Anticorrosion/Antifreeze	Meeting specification MB 325.0	S
Engine Oil		3.50 QTS.	3.3 L	Approved Engine Oil must meet specification MB 229.5	Mobil Formula M 5W-40, Mobil 1 0W-40, Labco MB 229.5 5W-30, Total Quartz 229.5 5W-30, Elf Excellium 0W-30, Shell Helix Ultra AB 5W-30	S
Fuel Tank		8.72 GALS.	33 L		Including a reserve of 1.32 gal.	S
Windshield Washer Fluid		4.00 QTS.	3.8 L	Windshield washer concentrate	Use a windshield washer concentrate labeled for summer and water for temperatures above freezing point or a windshield washer concentrate labeled for winter and water for temperatures below freezing point.	S

Fig 1: Identifying Left Instrument Cluster Button (Service Interval Button)



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

## TIRE PRESSURE MONITOR SYSTEM (TPMS) >



**NOTE:**

*Only vehicles listed in this index have a TPMS reset.*

### TPMS RESET INDEX

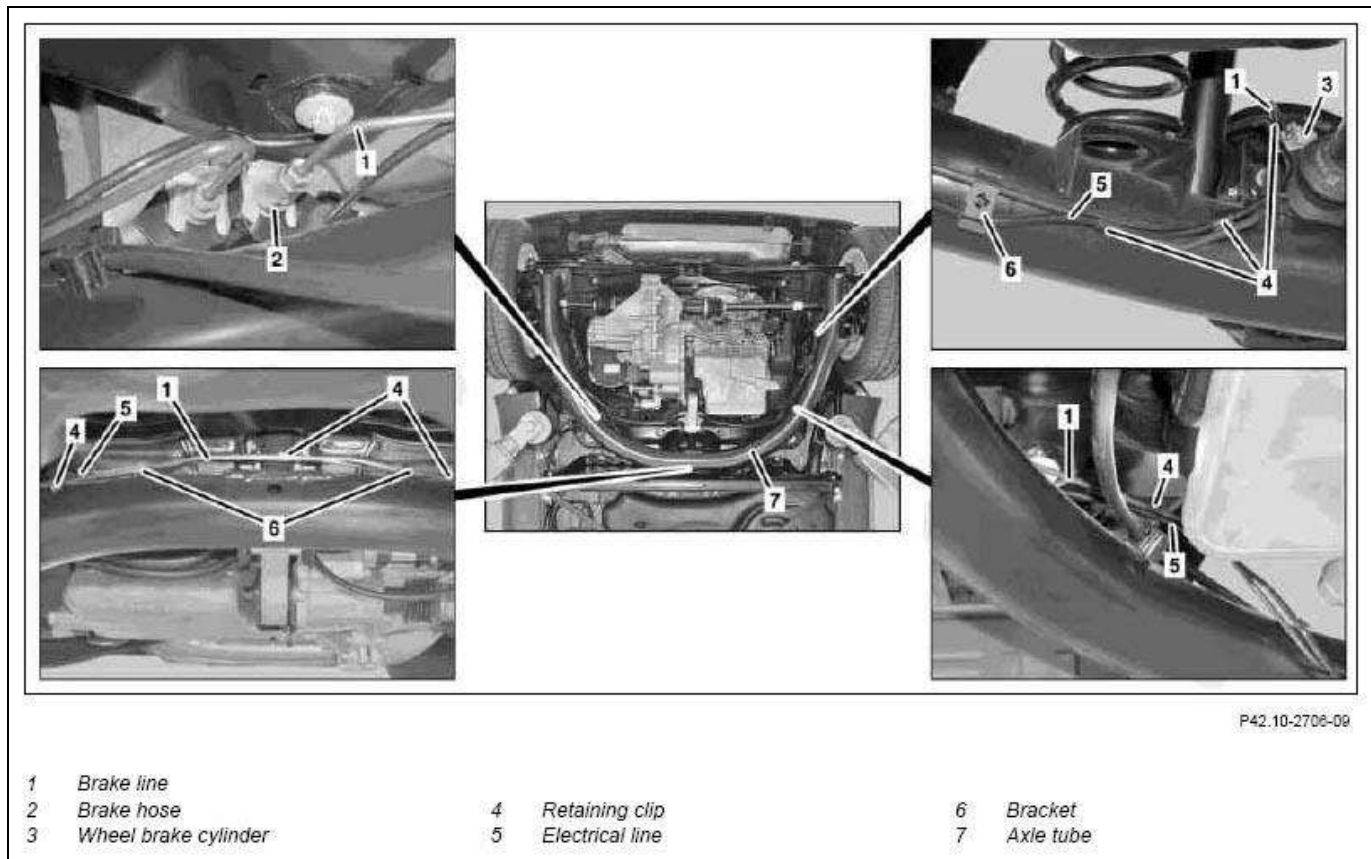
Model & Year	Reset Procedure
Fortwo	
2008-12	TPMS Reset - Procedure 1

## TIRE PRESSURE MONITOR SYSTEM (TPMS) > TPMS RESET - PROCEDURE 1 >

The TPMS must be restarted when you have adjusted the tire inflation pressure to a new level (e.g. because of different load or driving conditions). The TPMS sets new reference values for each tire. The TPMS is then recalibrated to the current tire inflation pressures.

Press the Restarting TPMS button. See Fig 1. The combination low tire pressure/TPMS malfunction telltale in the instrument cluster flashes for approximately 5 seconds and then goes out. After driving a few minutes the system verifies that the current tire inflation pressures are within the systems specified range. Afterwards the



Fig 1: Identifying Right Rear Brake Line Components



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

**Shown with right rear wheel removed**

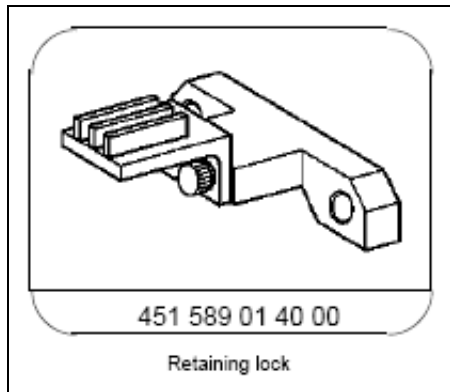
	<b>Remove/install</b>		
	<p><b>Risk of poisoning</b> caused by swallowing brake fluid. <b>Risk of injury</b> caused by brake fluid coming into contact with skin and eyes.</p>	<p>Only pour brake fluid into suitable and appropriately marked containers. Wear protective clothing and eye protection when handling brake fluid.</p>	<p>AS42.50-Z-0001-01A</p>
	<p>Brake fluid notes</p>		<p>AH42.50-P-0001-01A</p>
	<p>Notes on repairs to brake system</p>		<p>AH42.00-P-0003-01A</p>
	<p><b>Risk of death</b> caused by vehicle slipping or toppling off of the lifting platform.</p>	<p>Align vehicle between columns of vehicle lift and position four support plates at vehicle lift support points specified by vehicle manufacturer.</p>	<p>AS00.00-Z-0010-01A</p>
<p>1</p>	<p>Lift vehicle using the vehicle lift and remove rear underfloor paneling</p>	<p>Rechargeable drill / screwdriver <a href="http://gotis.aftersales.mercedes-benz.com">http://gotis.aftersales.mercedes-benz.com</a></p>	

			P-1002-01P
3	Detach retaining lock for engine		AR03.30-P-1600-06MCC
			Figure
4	Remove flywheel (1) from crankshaft	 Observe installation position of flywheel (1). <b>Installation:</b> Check flywheel (1) for wear; replace if necessary.	
5	Install in the reverse order		

FLYWHEEL, DRIVEN PLATE, VIBRATION DAMPER, STARTER RING GEAR

Number	Designation	Engine 132.9		
BA03.30-P-1002-01P	Bolt, flywheel to crankshaft	Stage 1	Nm	20
		Stage 2	∠°	90

Fig 2: Identifying Retaining Lock (451 589 01 40 00)



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

**TORQUE SPECIFICATIONS > TIGHTENING TORQUES: SMART: CRANK ASSEMBLY - BA03.00-Z-9999CZ >**

**MODEL all**

Balance shaft	ENGINE 639.939 in MODEL 454.0	BA03.20-P-1000-02F
Balancing shaft	ENGINE 134.910 /911 in MODEL 454.0	BA03.20-P-1000-02E
Connecting rod	ENGINE 122.9, 134.910 /911, 135.930 /950 in MODEL 454.0	BA03.10-P-1000-01N
Connecting rods	ENGINE 639.939 in MODEL 454.0	BA03.10-P-1000-01O
Connecting rods	ENGINE 132.9, 160.910 /920 /921 /922 /923	BA03.10-P-1000-01K
Crankshaft	ENGINE 639.939 in MODEL 454.0	BA03.20-P-1000-01I

mount wrench set		
001 589 01 16 01 Plug-in adapter	FG05/Set B	WS05.00-P-3149-01B
001 589 01 16 09 Box wrench bit	FG05/Set B	WS05.00-P-3149-09B
110 589 03 59 00 Mounting wedge	FG 00/01/05/13/18/ 26/54/67/68/72/77/80/82/83/88/91/ Set K	WS00.00-P-0274K
111 589 25 61 00 Valve assembly tools kit	FG 05/Set B	WS05.00-P-3137BA
111 589 25 61 03 Lever handle	FG05/Set C	WS05.00-P-3137-03C
111 589 25 61 05 Detent depressor	FG05/Set C	WS05.00-P-3137-05C
111 589 25 61 06 Thrust fork	FG05/Set C	WS05.00-P-3137-06C
111 589 25 61 12 Fixing bracket	FG05/Set C	WS05.00-P-3137-12C
111 589 25 61 19 Grid	FG05/Set C	WS05.00-P-3137-19C
122 589 00 63 00 Locking tool	FG 05/Set B	WS05.00-P-0254B
122 589 01 15 00 Drift	FG 05/Set C	WS05.00-P-0247C
122 589 01 61 00 Insertion tool	FG 05/Set C	WS05.00-P-0246C
122 589 02 61 00 Assembly tool	FG 05/Set C	WS05.00-P-0248C
132 589 00 43 00 Drift	FG 05/Set C	WS05.00-P-0270C
272 589 00 61 00 Depressor	FG 05/Set B	WS05.00-P-0233B
450 589 00 01 00 Open end wrench	FG 05/Set B	WS05.00-P-0210B
450 589 00 61 00 Depressor	FG 05/Set B	WS05.00-P-0235B
450 589 03 33 00 Puller	FG 05/Set B	WS05.00-P-0212B
450 589 05 99 00 Chain repair kit	FG 05/Set B	WS05.00-P-0211B
451 589 01 16 00 Thread extension for retaining fork	FG 05/Set B	WS05.00-P-0265B
451 589 01 63 00 Adapter	FG 01/03/05/Set B	WS01.00-P-0143B
452 589 01 99 04 Assembly cartridge	FG01/05/Set C	WS01.00-P-0108-04C

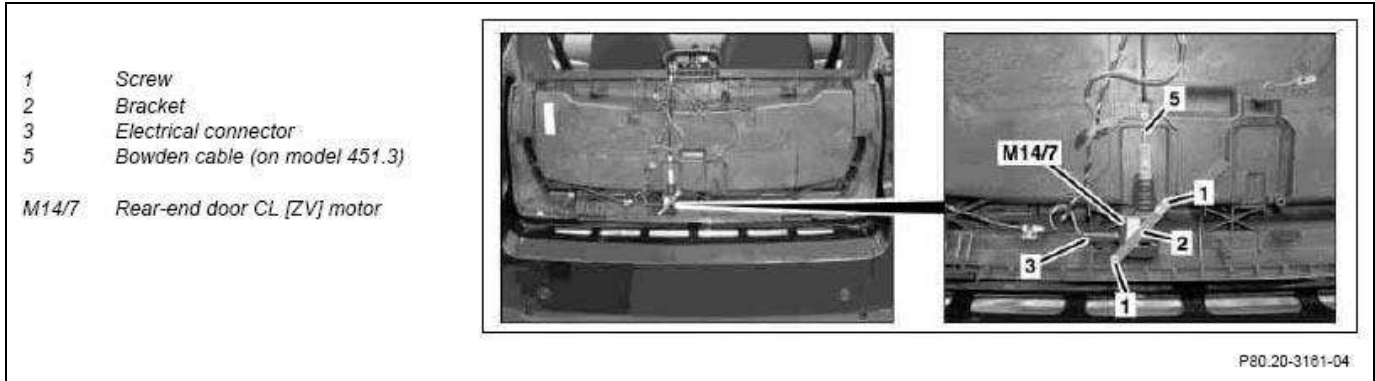
3	In tall in the reverse order
4	Check fuel filler flap CL [ZV] motor (M14/10) for proper function

**TESTING & REPAIR INDEX > REMOVE/INSTALL CENTRAL LOCKING MOTOR ON REAR-END DOOR - AR80.20-P-4005MCC >**

**MODEL 451.3 /4**

**Shown on model 451.3**

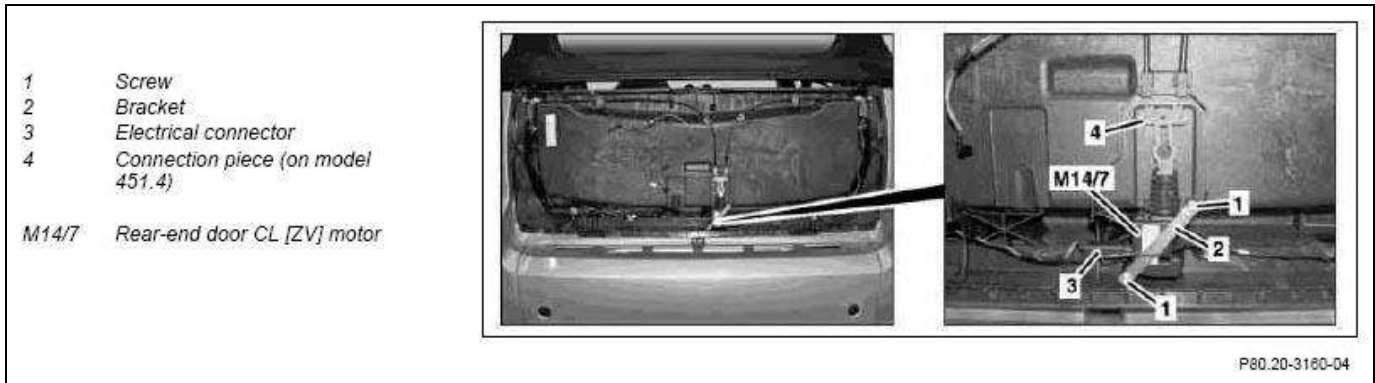
Fig 1: Identifying Central Locking Motor On Rear-End Door - Model 451.3



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

**Shown on model 451.4**

Fig 2: Identifying Central Locking Motor On Rear-End Door - Model 451.4

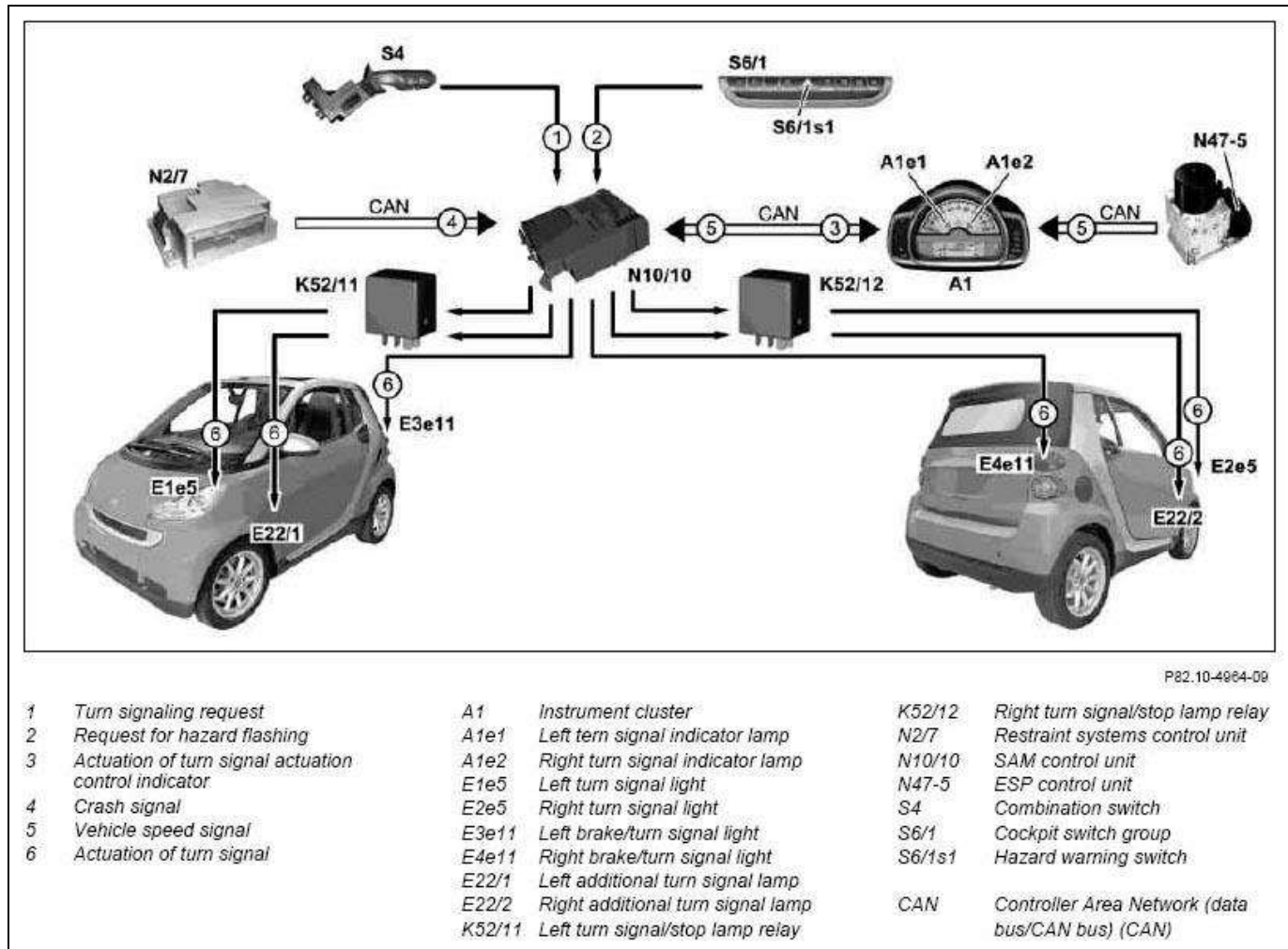


Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

<b>Remove/install</b>		
1	Remove rear-end door paneling	AR72.20-P-1000MCC
2	Disconnect electrical connector (3) from rear-end door CL motor (M14/7)	<b>Installation:</b> Ensure that electrical connector (3) arrests correctly.

**MODEL 451.3/4**

Fig 1: Turn Signal Indicator Actuation Function Chart



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

**Functions**

- Turn signals
- One-touch turn signaling
- Hazard warning flashing

**Turn signaling and one-touch turn signaling**

**Function requirements:**

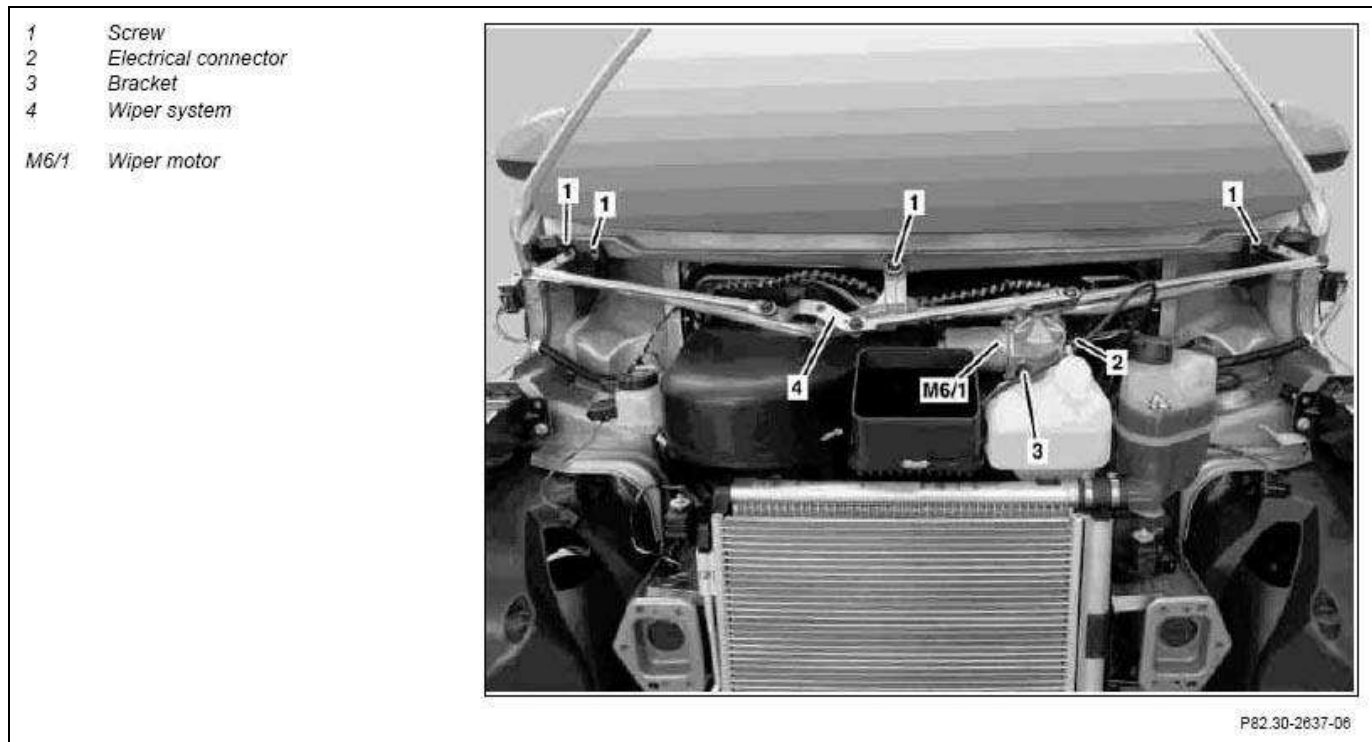
- Circ. 15 ON

**Turn signals**

Turn signaling is requested by pushing the combination switch down or up past the actuation point.

The SAM control unit registers the respective position of the combination switch and actuates the following lamps:

Fig 1: Identifying Wiper System, Motor, Bracket, Electrical Connector And Screw



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <b>Remove/install</b>	
1	Remove front module <span style="float: right;">AR62.30-P-1575MCU</span>
2	Disconnect electrical connector (2) from wiper motor (M6/1)
3	Remove bracket (3) with rubber grommet from wiper motor (M6/1)
4	Remove bolts (1) starting from the right and take off wiper system (4) <span style="float: right;">*BA82.30-P-1007-01F</span>
<input type="checkbox"/> <b>Installation:</b> Tighten bolts (1) starting from the left.	
5	Install in the reverse order
6	Perform function test of wiper system (4) with wiper motor (M6/1)

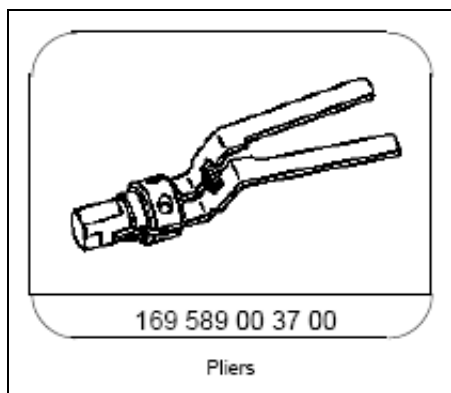
WINDSHIELD WIPER

Number	Designation	Model 451.3	Model 451.4
BA82.30-P-1007-01F	Bolt, wiper linkage to body	Nm 10	10



	approx. 1.5 cm with pliers (2)	
3	Remove bolts (3)	
4	Swivel the trim of the vertical strut (1) backwards in the lower area and remove until the electrical connector (5) of the interior socket (X58/1) as well as the electrical connector (4) of the data link connector (X11/4) are accessible	
5	Separate the electrical connector (5) of the interior socket (X58/1) and electrical connector (4) of the data link connector (X11/4)	
6	Remove vertical strut paneling (1)	
7	Unclip interior socket (X58/1) from rear of vertical strut paneling (1) and remove toward front	<b>i Installation:</b> Before installing in the trim of the vertical strut, pull out the metal insert of the interior socket (X58/1) (1) using the pliers (2).
8	Install in the reverse order	

Fig 2: Identifying Pliers (169 589 00 37 00)



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

## TESTING & REPAIR > CHECK QUIESCENT CURRENT CONSUMPTION - AR54.10-P-1030MCE >

MODEL 451.3/4

M16/6	Throttle valve actuator	32L
M3/3	Fuel pump with fuel level sensor	10L
M3/3b1	Fuel level sensor	12L
M33	Secondary air injection pump	19L
N10/10	SAM control unit	75A
N10/10	SAM control unit	5L
N10/10f1	Fuse 1	76A
N10/10f10	Fuse 10	73A
N10/10f10	Fuse 10	5L
N10/10f16	Fuse 16	9L
N10/10f19	Fuse 19	3L
N10/10f27	Fuse 27	2L
N10/10f8	Fuse 8	8L
N3/10	ME-SFI [ME] control unit	61A
N3/10	ME-SFI [ME] control unit	52A
N3/10	ME-SFI [ME] control unit	44A
N3/10	ME-SFI [ME] control unit	36A
N3/10	ME-SFI [ME] control unit	28A
N3/10	ME-SFI [ME] control unit	20A
N3/10	ME-SFI [ME] control unit	12A
N3/10	ME-SFI [ME] control unit	4A
N3/10	ME-SFI [ME] control unit	67A
R4	Spark plugs	59L
R4	Spark plugs	56L
R4	Spark plugs	55L
S41/1	Oil pressure switch	42L
T1/1	Cylinder 1 ignition coil	55K
T1/2	Cylinder 2 ignition coil	57K
T1/3	Cylinder 3 ignition coil	59K
U4	Valid for cruise control	26F
W11	Ground (engine)	79E
W11/5	Ground (engine/body)	18G
W11/5	Ground (engine/body)	79L

valve elements) lead to severe corrosion damage and can destroy the valve.  
 ⓘ See tire pre-ure information on the B-pillar of the driver door.

20	Balance wheel	AR40.10-P-1040MCC
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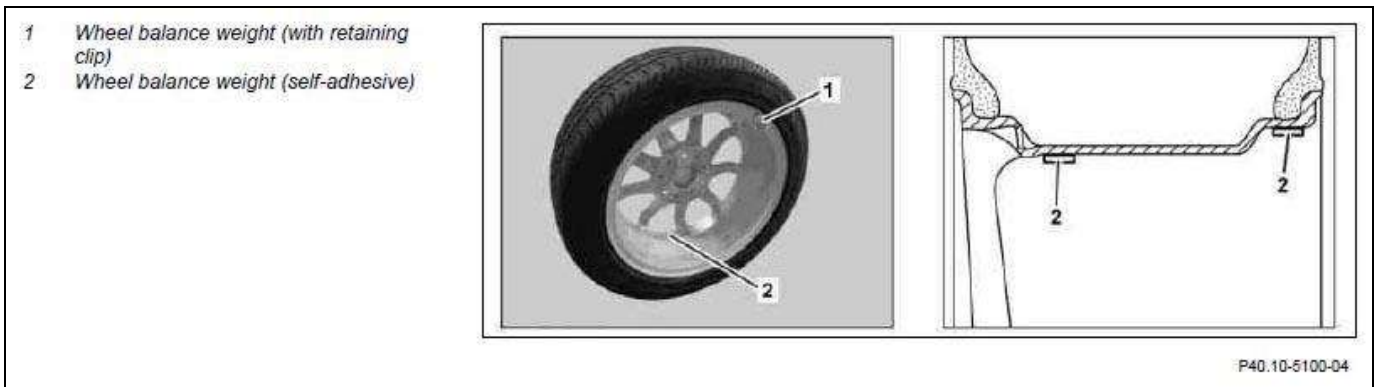
WHEELS

Number	Designation	Model 451.3/4
BA40.10-P-1002-01E	Nut to valve	Nm 6

**TESTING & REPAIR > BALANCING WHEELS - AR40.10-P-1040MCC >**

**MODEL 451.3/4**

Fig 1: Identifying Wheel Balance Weights



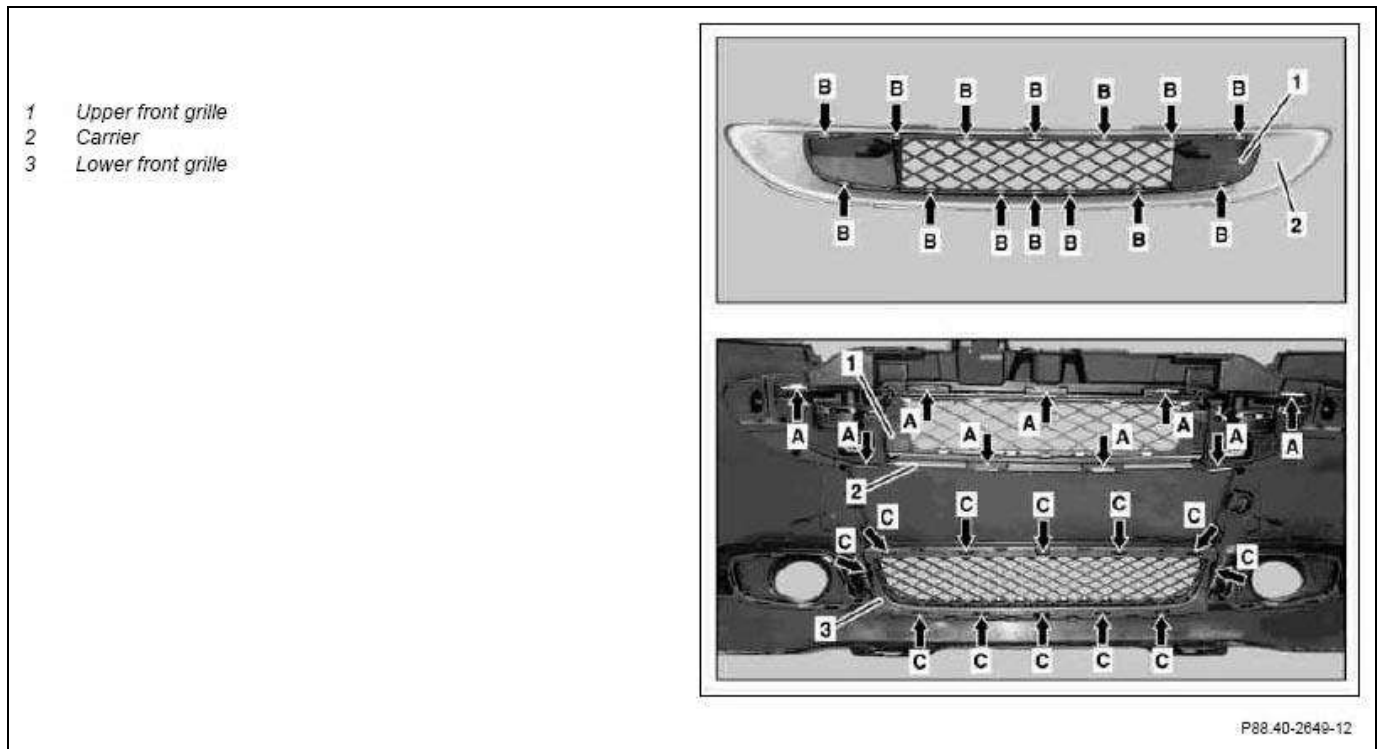
Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

Balancing	
1	<p>Remove wheel balance weights (with retaining clip) (1) or wheel balance weights (self-adhesive) (2)</p> <p>ⓘ Use wheel balance weight (self-adhesive) (2) for:</p> <ul style="list-style-type: none"> <li>• Cramped installation conditions</li> <li>• Conditions caused by the construction which rule out the use of wheel balance weights (with retaining clip) (1)</li> <li>• Customer request</li> </ul>
2	<p>If necessary clean wheels, attach to stationary balancing machine and balance dynamically to 0 g for each side of the wheel</p>

**TESTING & REPAIR > DRAINING TIREFIT SEALANT OUT OF TIRES - AR40.10-P-1080MCU**

>

Fig 1: Identifying Carrier & Upper And Lower Front Grilles



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

	<b>Remove/install</b>	
1	Remove CBS front end and lay down on suitable base	AR88.00-P-1010MCC
2	Unclip catch hooks (arrows A) and remove carrier (2) with upper front grille (1).	
3	Unclip catch hooks (arrows B) and remove upper front grille (1) from carrier (2).	
4	Unclip catch hooks (arrows C) and remove lower front grille (3).	
5	Install in the reverse order	

**TESTING & REPAIR > REMOVE/INSTALL TANK RECESS - AR88.60-P-2000MCC >**

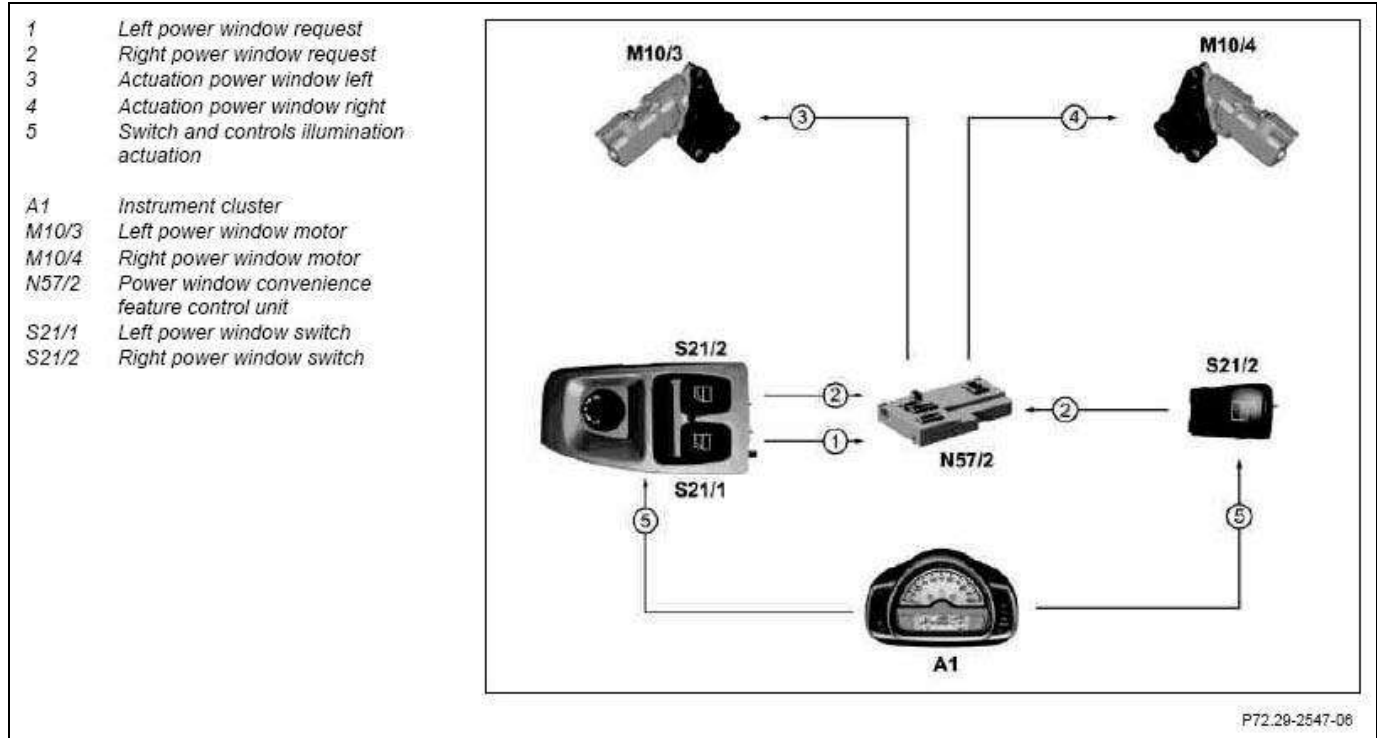
**MODEL 451.3/4**

**BASIC KNOWLEDGE > POWER WINDOWS (PW [EFH]), FUNCTION - GF72.29-P-0003MCU**

&gt;

**MODEL 451.3/4 with CODE (V43) Power window**

Fig 1: Power Windows (EFH) Function Diagram



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

The power window system allows the side windows to be opened and closed.

**Function requirements**

- Circuit 15 On

**Operating keys and switches**

- Left power window switch
- Right power window switch

**Function**

To raise or lower the window, actuate and hold down the corresponding power window switch for longer than 420 ms in the opening or closing direction.

This request is read in by the power window convenience feature control unit.

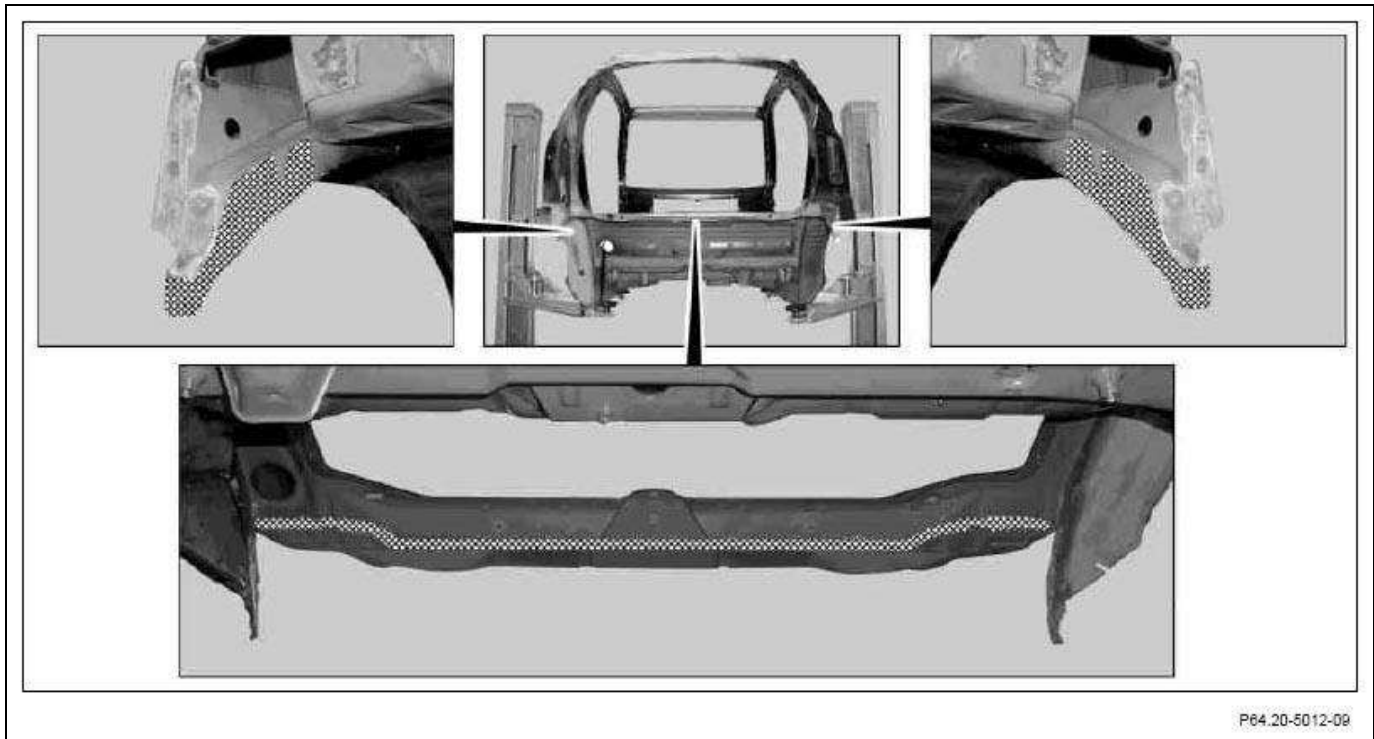
The power window convenience feature control unit then energizes the corresponding power window motor until the motion request is stopped by the power window switch.

The limit stop on the side window to be adjusted is recognized by the power window convenience feature control unit when the power consumption of the power window motor increases (lockup current recognition)

3. Grind all spot welds down flat if required.
4. Clean all other weld joints with wire brush.

## TESTING & REPAIR > PREPARE CONNECTING POINTS FOR END CROSSMEMBER INNER SECTION ON BODY. - AR64.20-P-1120-04MCC >


Fig 1: Identifying Grinding Areas On End Crossmember Inner Section



Courtesy of MERCEDES-BENZ OF NORTH AMERICA.

### Shown on model 451.3

1. Grind mating surfaces down to bare metal in the crosshatched areas.

 Grind spot weld flanges down to bare metal on both sides. Coat insides of spot weld flanges with zinc dust paint.

## TESTING & REPAIR > REPLACE END CROSSMEMBER INTERNAL PART - AR64.20-P-1120MCC >

### MODEL 451.3/4

### Shown on model 451.3

## Fig 1: Premium Radio Circuit, W/ Premium Sound

