

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 104 WINDSHIELD WIPING AND WASHING SYSTEMS

VOLKSWAGEN AG GERMANY
2016 VOLKSWAGEN e-GOLF ELECTRIC, PASSENGER CAR
NHTSA NO. C20165800

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1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443



August 15, 2016

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2016 VOLKSWAGEN e-GOLF Electric Passenger Car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 104 testing to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure, TP-104-08 dated 26 June 1996 and General Testing Laboratories, Inc. (GTL) Test Procedure, TP-104-08A dated 4 April 1997.

1.1 The test vehicle was a 2016 VOLKSWAGEN e-GOLF Electric Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: WVKWP7AU2GW907354

B. NHTSA No.: C20165800

C. Manufacturer: VOLKSWAGEN AG GERMANY

D. Manufacture Date: 12/15

E. Color: Pacific Blue

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 104 testing on August 4, 2016.

SECTION 2

COMPLIANCE TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 GENERAL

The 2016 VOLKSWAGEN e-GOLF Electric passenger car, NHTSA No. C20165800 was subjected to FMVSS No. 104 tests on August 4, 2016. The selected portions of FMVSS No. 104 tests used were as amplified in the following subparagraphs. The test vehicle was positioned in the test system with three water spray nozzles suspended in line with the center of the longitudinal axis of the windshield and horizontal left/right center of the windshield to provide an even distribution of spray to the entire windshield. The height of the nozzles was approximately 22 inches above the glazing surface.

2.1 WIPER FREQUENCY TEST

The wiper frequency test was performed with the ICE (internal combustion engine) or in the case of an EV (electric vehicle) the electric propulsion system activated and with a minimum of 50 cubic inches per minute of water from the spray nozzles. The wiper frequency was measured at the low and high wiper speed settings with the propulsion system activated in its idle condition. In the case of ICE vehicles, the wiper frequency was also measured at the low and high wiper speed settings with the engine at 2000 RPM.

2.2 WIPED AREA TEST

The test was conducted with the windshield wiper system operating at the high speed setting, engine (ICE or EV) at idle RPM and the spray nozzles spraying water at a minimum of 50 cubic inches per minute. The wiper blade wipe pattern was outlined on the glazing surface and then transferred to a windshield pattern. The wiped area was determined for areas A, B and C from the windshield pattern.

2.3 WASHER CAPABILITY TEST

The windshield glazing surface was coated with a mixture of water and fine grade test dust. Within 15 seconds following application of the water-dust mixture, the windshield wiper and washing system was activated in the high speed mode for ten complete cycles. The vehicle's engine (ICE or EV) was operating at idle RPM. The cleared areas of the windshield were marked on the inside windshield surface. After ten complete cycles the system was deactivated and the wiped area transferred to a windshield pattern.

The glazing surface was cleaned and dried. The water dust mixture was re-applied and the test repeated.

The windshield patterns were used subsequently to determine the cleared area percentages.

SECTION 2 CONTINUED

COMPLIANCE TEST PROCEDURE AND SUMMARY OF RESULTS

2.4 SUMMARY OF RESULTS

Based on the test performed, the test vehicle's windshield wiping and washing system appears to meet the requirements of FMVSS 104.

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of testing on the 2016 VOLKSWAGEN e-GOLF Electric Passenger Car.

SUMMARY OF DATA
FMVSS 104, WINDSHIELD WIPING AND WASHING SYSTEMS

VEH. MOD YR/MAKE/MODEL/BODY: 2016 VOLKSWAGEN e-GOLF PASSENGER CAR
 VEH. NHTSA NO: C20165800; VIN: WVWKP7AU2GW907354
 VEH. BUILD DATE: 12/15 TEST DATE: AUGUST 4, 2016
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

WIPER TYPE: 2-SPEED ELECTRIC WITH DELAY

WASHER TYPE: HIGH PRESSURE ELECTRIC PUMP

WINDSHIELD AREAS: A = 1042 in² B = 734.5 in² C = 249 in²

MANUFACTURER'S WINDSHIELD PATTERN USED: Yes X No

ACCESSIBILITY:

(1) Washer Control Accessible: Yes X No
 (2) Wiper Control Accessible: Yes X No
 (3) Washer Reservoir Filler Accessible: Yes X No

DESCRIBE UNUSUAL FEATURES OF WIPING AND WASHING SYSTEMS:

PERFORMANCE:

TEST	PASS	FAIL
WIPER FREQUENCY	X	
WIPED AREA	X	
WASHER CAPABILITY	X	

RECORDED BY: G. FARRAND

DATE: 08/04/16

APPROVED BY: D. MESSICK

FREQUENCY TEST DATA
FMVSS 104 – WINDSHIELD WIPER SYSTEM

VEH. MOD YR/MAKE/MODEL/BODY: 2016 VOLKSWAGEN e-GOLF PASSENGER CAR
 VEH. NHTSA NO: C20165800; VIN: WVWKP7AU2GW907354
 VEH. BUILD DATE: 12/15 TEST DATE: AUGUST 4, 2016
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

Water Hardness: 5.0 grains/gallon (12 max.); Date Certified: 08/02/16

Water Spray Flow Rate: 86 in³/min. (specified range = 50 to 100 in³/min.)

Ambient Air Temp.: 85 °F (50-100°F); Water Temp.: 83.0 °F (100°F max.)

Manufacturer's Recommended Engine Idle Speed: 0 rpm (Electric Vehicle)

RUN 1, MAXIMUM WIPER FREQUENCY TEST:

TIME	ENGINE SPEED	TOTAL CYCLES	AVG. CYCLES/MIN. (45 MINIMUM)
1 ST 3 minutes	<u>0</u> (idle ± 50 rpm)	181	60.3
2 ND 3 minutes	<u>0</u> (2000 rpm ± 50 rpm)	181	60.3

Frequency at least 45 cycles/minute regardless of engine speed: Yes X No _____

RUN 2, LOWER WIPER FREQUENCY TEST:

TIME	ENGINE SPEED	TOTAL CYCLES	AVG. CYCLES/MIN. (20 MINIMUM)
1 ST 3 minutes	<u>0</u> (idle ± 50 rpm)	121	40.3
2 ND 3 minutes	<u>0</u> (2000 rpm ± 50 rpm)	119	39.6

Highest and lower frequency differ by at least 15 cycles/minute, and lower frequency is at least 20 cycles/minute regardless of engine speed: Yes X No _____

REMARKS: ELECTRIC VEHICLE

RECORDED BY: G. FARRAND

DATE: 08/04/16

APPROVED BY: D. MESSICK

WIPE AREA TEST DATA
FMVSS 104 – WINDSHIELD WIPER SYSTEM

VEH. MOD YR/MAKE/MODEL/BODY: 2016 VOLKSWAGEN e-GOLF PASSENGER CAR
 VEH. NHTSA NO: C20165800; VIN: WVWKP7AU2GW907354
 VEH. BUILD DATE: 12/15; TEST DATE: AUGUST 4, 2016
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

Air Temperature in test area = 85 °F (specified range of 50 to 100°F)

Air Velocity at windshield = .5 mph (specified range of 0 to 1 mph)

Engine speed = 0 rpm (manufacturer's recommended idle $\pm$ 50 rpm)

Temperature of water spray = 83 °F (100° F maximum)

Water spray flow rate = 86 in³/min. (specified range of 50 to 100 in³/min.)

Windshield wiper frequency = 60 cycles/min. (45 cpm minimum)

TEST RESULTS:

PERCENT WIPED				
WINDSHIELD AREA	ACTUAL	REQUIRED	PASS	FAIL
A	95.04	80%	X	
B	96.2	94%	X	
C	100%	99%	X	

REMARKS: ELECTRIC VEHICLE

RECORDED BY: G. FARRAND

DATE: 08/04/16

APPROVED BY: D. MESSICK

CAPABILITY TEST DATA
FMVSS 104 – WINDSHIELD WASHER SYSTEM

VEH. MOD YR/MAKE/MODEL/BODY: 2016 VOLKSWAGEN e-GOLF PASSENGER CAR
 VEH. NHTSA NO: C20165800; VIN: WVWKP7AU2GW907354
 VEH. BUILD DATE: 12/15; TEST DATE: AUGUST 4, 2016
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

Air Temperature in test area = 85.0 °F (specified range of 70 to 80°F)

Washer reservoir fluid temperature = 78 °F (specified range of 70 to 80°F)

Air Velocity at windshield = .5 mph (specified range of 0 to 1 mph)

Engine speed = 0 rpm (manufacturer's recommended idle $\pm$ 50 rpm) (Electric Vehicle)

Number of windshield washer nozzles on the vehicle = 2 (Mounted on Hood)

Windshield washer system activation coordinated with components of the wiper system:

Yes X No

TEST RESULTS:

CLEARED AREA PERCENTAGES						
WINDSHIELD AREA	TEST 1	TEST 2	AVG	REQ'D*	PASS	FAIL
A	94.7	94.7	94.7	75%	X	
B	95.6	95.6	95.6	75%	X	
C	100	100	100	75%	X	

*NOTE FOR REFERENCE ONLY: SAE 942b, revised Jul72, recommends capability to clear 80% of the total wash area and 90% of the wash area included in AREA C.

REMARKS:

RECORDED BY: G. FARRAND
 APPROVED BY: D. MESSICK

DATE: 08/04/16

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
TIMER	ACCU-SPLIT	ACT2	01/16	01/17
TEMPERATURE READOUT	OMEGA	43P136P	05/16	05/17
SPRAY SYSTEM	GTL	N/A	BEFORE USE	BEFORE USE
ANEMOMETER	OMEGA	HH-600	03/15	03/17
CYCLE COUNTER	GTL	GTL	BEFORE USE	BEFORE USE
SOFT WATER	N/A	N/A	BEFORE USE	BEFORE USE
TEST DUST	AC	GM FINE	CALIBRATED DUST	CALIBRATED BY VENDOR*

*AC Inspection #503, Batch #1943, Measured with particle size roller analyzer.

SECTION 5
PHOTOGRAPHS



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.1
LEFT SIDE VIEW OF VEHICLE



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.2
RIGHT SIDE VIEW OF VEHICLE



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.3
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE



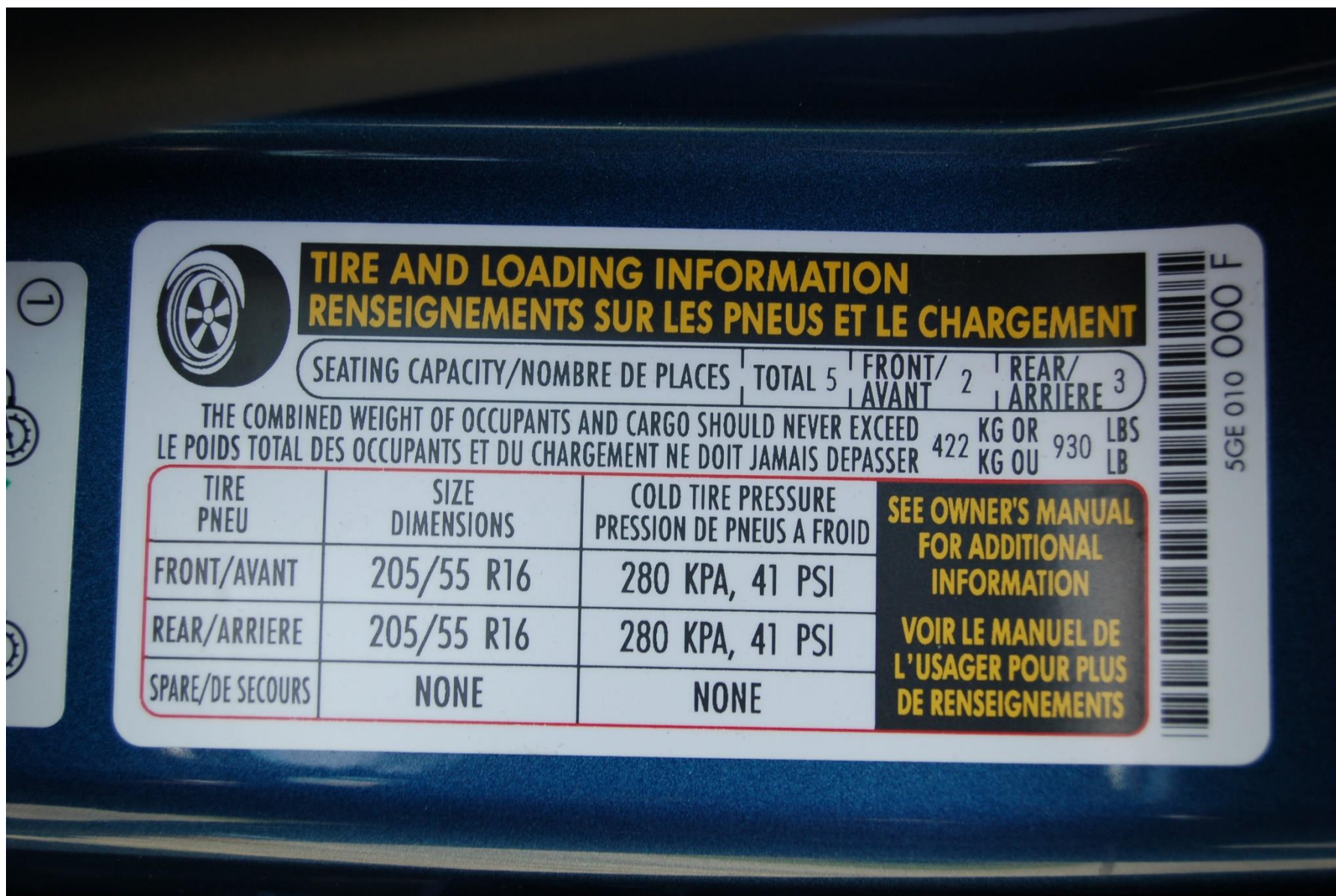
2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.4
¾ REAR VIEW FROM RIGHT SIDE VIEW OF VEHICLE



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.5
VEHICLE CERTIFICATION LABEL



2016 VOLKSWAGEN e-GOLF
 NHTSA NO. C20165800
 FMVSS NO. 104

FIGURE 5.6
 VEHICLE TIRE INFORMATION LABEL



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.7
INSTRUMENTATION AND EQUIPMENT SET-UP



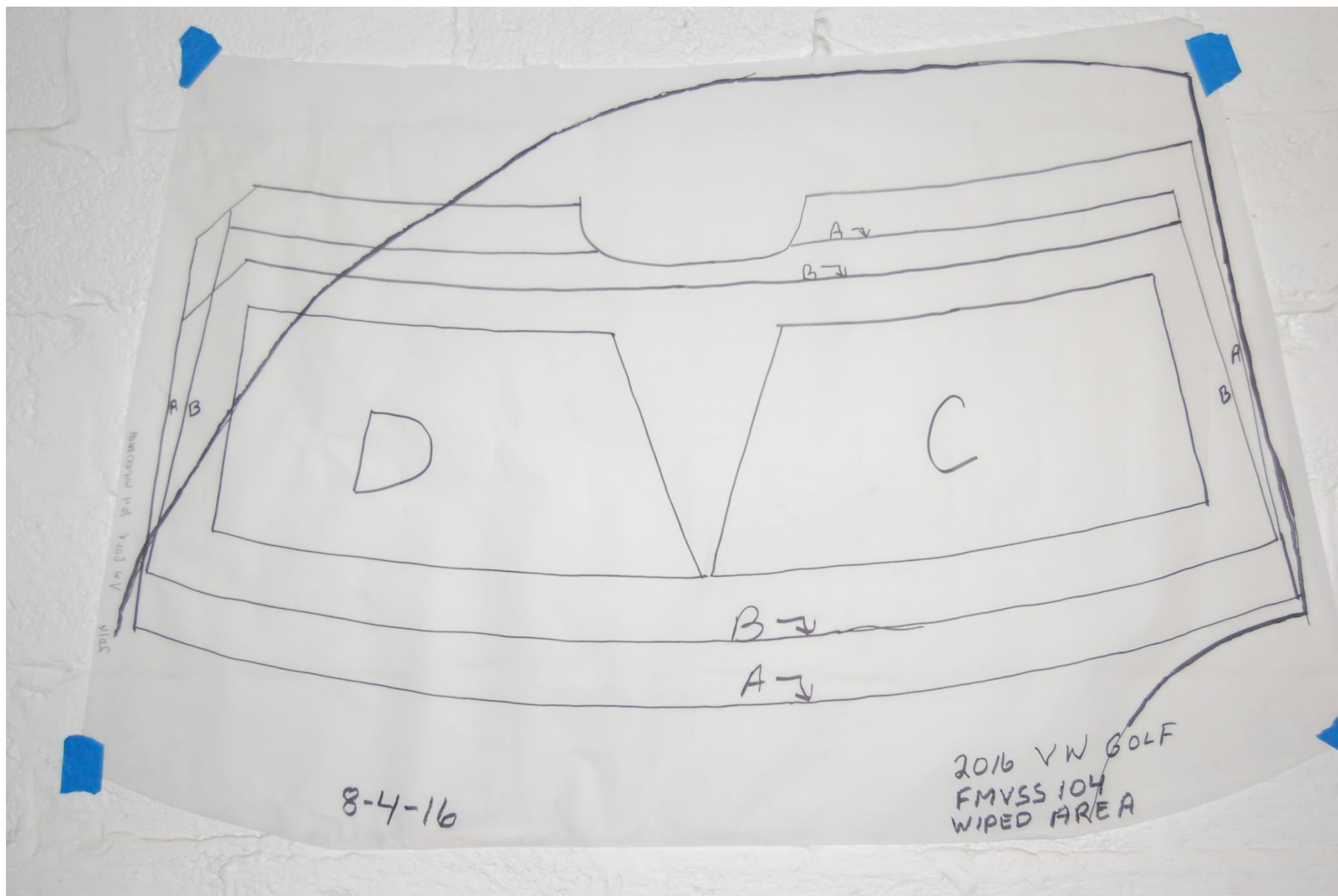
2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.8
WIPER AND WASHER CONTROL



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.9
WIPED AREA TEST IN PROGRESS



2016 VOLKSWAGEN e-GOLF
 NHTSA NO. C20165800
 FMVSS NO. 104

FIGURE 5.10
 WIPED AREA TEST PATTERN



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.11
CAPABILITY TEST #1 PRE-COATED WINDSHIELD



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.12
CAPABILITY TEST #1 IN PROGRESS



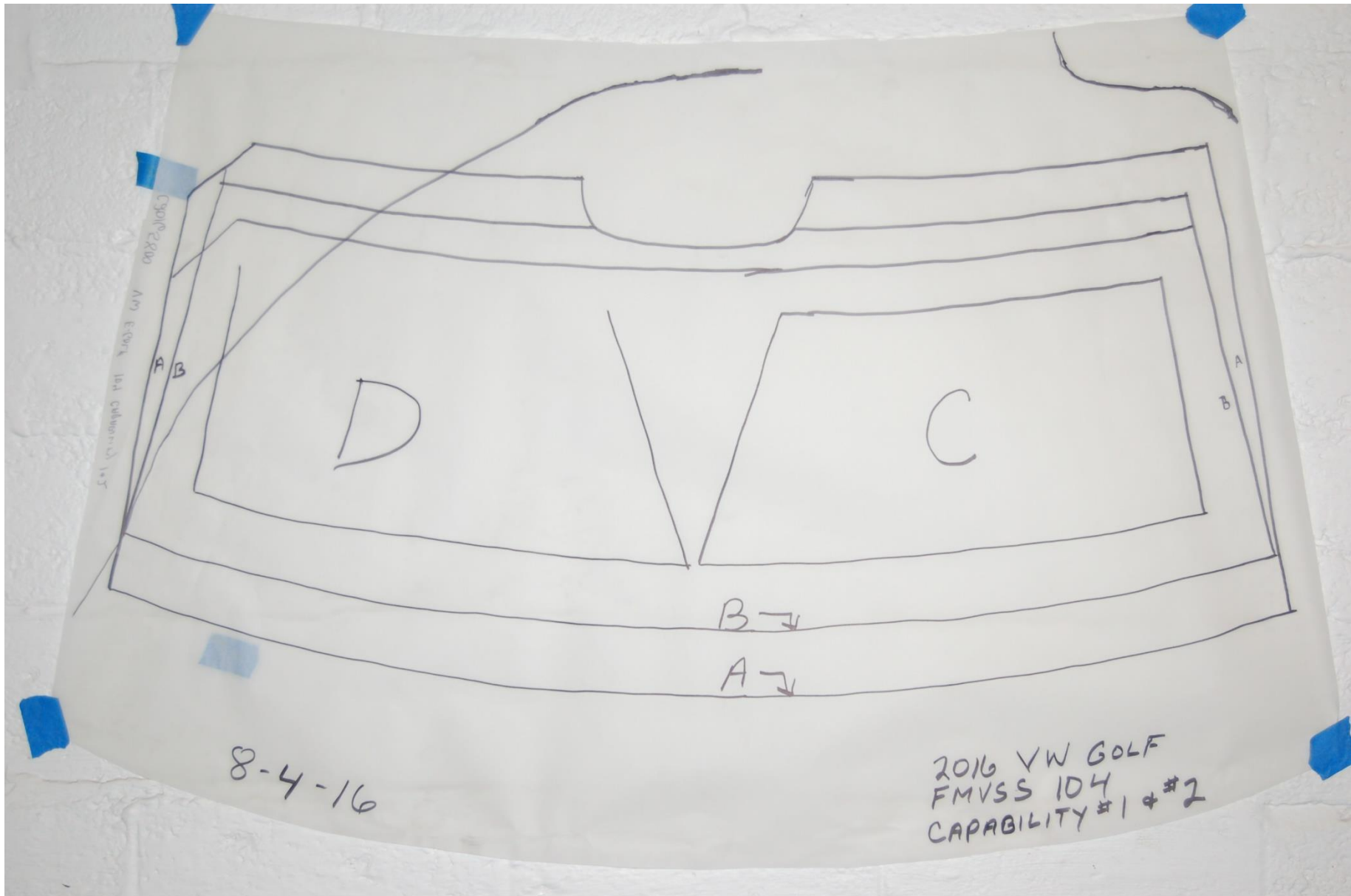
2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.13
CAPABILITY TEST #2 PRE-COATED WINDSHIELD



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.14
CAPABILITY TEST #2 IN PROGRESS



2016 VOLKSWAGEN e-GOLF
NHTSA NO. C20165800
FMVSS NO. 104

FIGURE 5.15
CAPABILITY TEST #1 AND #2 PATTERN

SECTION 6

OWNER'S MANUAL INFORMATION

Windshield wipers and washer

Introduction

In this section you'll find information about:

- Indicator light 142
- Windshield wiper lever 143
- Windshield wiper functions 144
- Windshield wiper service position 145
- Rain sensor 145
- Checking and refilling windshield washer fluid 146

More information:

- Exterior views → page 6
- Infotainment system → page 28
- Shifting → page 229
- Climate control → page 306
- Working in the electric motor compartment → page 313
- Exterior care and cleaning → page 327

WARNING

Windshield washer fluid without enough frost protection can freeze on the windshield and reduce visibility.

Indicator light

Please read the introductory information and heed the Warnings and Notice  and  on page 42.

Your vehicle may be equipped with an indicator light that comes on when the windshield washer fluid level is low.

Lights up Possible cause

- | Lights up | Possible cause |
|---|---|
|  | Not enough windshield washer fluid. ^{a)} |

^{a)} Displayed in color on an instrument cluster with color display.

When the ignition is switched on, several warning and indicator lights come on briefly for a function check. They go out after a few seconds.

Windshield wiper lever

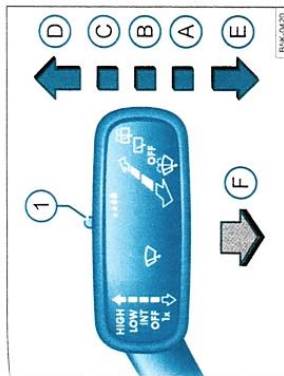


Fig. 81 Operating the front windshield wipers.

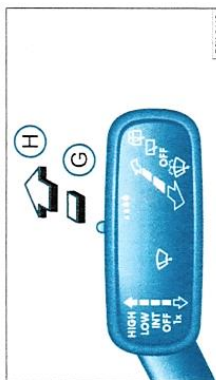


Fig. 82 Operating the rear wiper.

Please read the introductory information and heed the Warnings and Notice  and  on page 142.

Move the lever to the desired position → :

	OFF	Wiper switched off.
	INT	Intermittent wiping for the front windshield. Rain sensor active (if equipped).
	LOW	Slow wiper speed.
	HIGH	Fast wiper speed.
	1x	One-tap wiping – brief wiping. Hold the lever pressed down longer to wipe more often.
		Pull the lever toward the steering wheel to activate the front windshield washers, then release.
		Intermittent wiping for the rear window. The wiper wipes about every 6 seconds.
		Press the lever forward as far as it will go to activate the rear window washers, then release to stay in intermittent wiping mode (position ). Pull the lever toward the steering wheel to turn the rear wiper off.
		Switch for adjusting the windshield wiper interval settings (vehicles without a rain sensor) or the sensitivity of the rain sensor (vehicles with a rain sensor).

NOTICE

To help prevent damage to the wiper blades and the wiper motor when it is cold outside, always make sure that blades are not frozen to the windshield before operating the wipers. Using the service position can be helpful in cold weather so the wipers do not freeze to the windshield → page 145, *Windshield wiper service position*.

- If the ignition is switched off while the wipers are running, the wipers will continue at the same wiping speed when the ignition is switched on again. Frost, ice, snow, leaves, and other objects on the windshield can damage the wipers and the wiper motor.
- Remove snow and ice from the wipers before you begin driving.

• If the front wipers are on, the rear wiper is switched on automatically when backing up.

On appropriately equipped vehicles, this feature can be turned on and off in the Infotainment system by pressing the **Setup** button followed by the **Setup** and **Mirror and wipers** function keys → page 28, **Menu and system settings (SETUP)**.

If the wiper blades freeze to the windshield, loosen them carefully. Volkswagen recommends using a deicing spray.

• If the wiper blades freeze to the windshield, loosen them carefully. Volkswagen recommends using a deicing spray.

NOTICE
If the wiper blades freeze to the windshield, loosen them carefully. Volkswagen recommends using a deicing spray.

On some vehicles, the windshield wipers work only if the ignition is switched on and the electric motor hood is closed. The windshield wipers turn off automatically when the electric motor hood is opened. The rear window wiper runs off when the rear hatch is opened.

The intermittent wiping for the front windshield depends on the driving speed. The higher the speed, the faster the wipers move.

Windshield wiper functions

Please read the introductory information and heed the Warnings and Notice and on page 142.

Wiper performance in different situations:

When the vehicle is not moving:	The wiper speed changes temporarily to the next lower speed.
During automatic wipe/wash:	While the washer system is working, the Climatronic switches to recirculation for about 30 seconds to help prevent the washer fluid odor from entering the vehicle interior.
During intermittent wiping:	Speed-dependent interval control: The higher the vehicle speed, the faster the wipers move.

heated washer nozzles
Some vehicles are equipped with heated washer nozzles. The heating thaws frozen washer nozzles, but not the fluid supply hoses. When the ignition is switched on, the heat applied to the washer nozzles is automatically regulated depending on the outside air temperature.

adlight washer system (if equipped)
The headlight washer system cleans the headlights glass.
The ignition and the headlights (high or low beams) are switched on, the headlights are cleaned the first time and every fifth time the windshield washers are activated. This happens only when the low or high beams are on when the windshield wiper lever is pulled towards the steering wheel. However, the headlights must still be washed by hand periodically to get rid of hard-to-remove dirt (like insect splatter).

To help make sure that the headlight washer system works during winter weather, always keep the headlight washer nozzles free of snow and remove any ice with a deicer spray before driving. Use a deicer spray to remove any ice.
If there is something on the windshield, the wiper will try to wipe it away. If it continues to block the wiper, the wiper will stop moving. Remove the obstacle and switch the wiper on again.

Windshield wiper service position

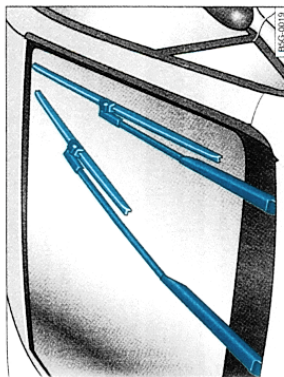


Fig. 83 Windshield wiper in service position.

Please read the introductory information and heed the Warnings and Notice and on page 142.

In the service position, the wiper arms can be lifted away from the windshield → fig. 83. The wipers are moved to the service position as follows:

- The electric motor hood must be closed → page 313, *Working in the electric motor compartment*.
- Switch the ignition off, turn it on briefly, and then off again.
- Press the windshield wiper lever down briefly → fig. 81 (E) when the ignition is off.
- Wipers move into service position.

Lifting the wiper blades and tilting them away from the windshield

- Put the wiper arms in service position → 1.
- Do not handle the wiper blades, handle the wiper arms only at the attachment above the wiper blades.

Carefully fold the wiper arms back onto the windshield before driving! Switch the ignition on and press the windshield wiper lever down briefly → fig. 81 (E). The wiper arms move back to their original position.

NOTICE

- To help prevent damage to the electric motor hood and the windshield wiper arms, lift the wiper arms away from the windshield only when they are in the service position.

- Always carefully fold the windshield wiper arms down against the windshield before driving the vehicle.

The windshield wiper arms can be moved to the service position only when the vehicle is not moving.

Rain sensor

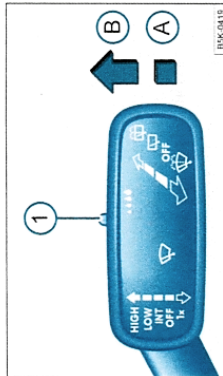


Fig. 84 Windshield wiper lever: Adjusting the rain sensor (1) (if equipped).

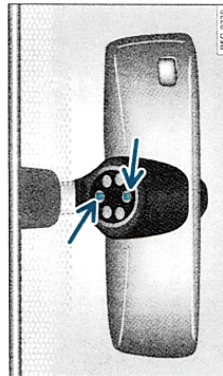


Fig. 85 Inside the front windshield above the inside mirror: Sensitive rain sensor surface.

Please read the introductory information and heed the Warnings and Notice and on page 142.

When switched on, the rain sensor automatically shortens or lengthens the time between wiping intervals depending on how hard it is raining → A. The rain sensor's sensitivity can be adjusted manually → fig. 84 (1).

On appropriately equipped vehicles, the automatic wipe function of the rain sensor can be turned on and off in the Infotainment system by pressing the **Setup** button followed by the **Setup** and **Mirror and wipers** function keys → page 28, **Menu and system settings (SETUP)**.

- ush the lever into the desired position → fig. 84;
- Rain sensor off (windshield wiper lever home position).
 - Rain sensor active – automatic wiping as needed.
 - Adjust the sensitivity of the rain sensor:
 - Move switch to the right – high sensitivity.
 - Move switch to the left – low sensitivity.

After switching the ignition off and back on again, the rain sensor stays on and works again when the wiper lever is in position (B).

Possible reasons for changes in the way the rain sensor works

The rain sensor may misread what is happening in the detection zone of its sensitive rain-sensor surface → fig. 85 (arrow) and not work for a number of reasons, which may include:

Worn out wiper blades: Worn out wiper blades may leave a film of water or wiping streaks; this can cause the wipers to run longer, to wipe more often, or to wipe continuously at high speed.

Insects: Insects hitting the windshield may trigger the wipers.

Salt streaks: Salt streaks on the windshield from winter driving can cause wiping more often or continuously on glass that is almost dry.

Dirt: Caked-on dust, wax, any other buildup on the windshield (lotus effect), or car-wash detergent residue can lower the rain sensor's sensitivity and cause it to react too slowly or not at all.

Crack or chip in the windshield: If a stone hits and chips the windshield while the rain sensor is on, this will trigger a wiper cycle. After that, the rain sensor will recognize the change and recalibrate itself to respond to the sensitive surface's reduced detection zone. Depending on the size of the chip, the sensor's reaction pattern may or may not change.

WARNING

The rain sensor cannot always recognize rain and activate the wipers.

Switch the wipers on manually when water on the windshield reduces visibility.

- Clean the rain sensor's sensitive surface → fig. 85 (arrows) regularly and check the wiper blades for wear or damage.

- To remove wax and coats of polish safely, we recommend using an alcohol-based windshield cleaner.

Checking and refilling windshield washer fluid

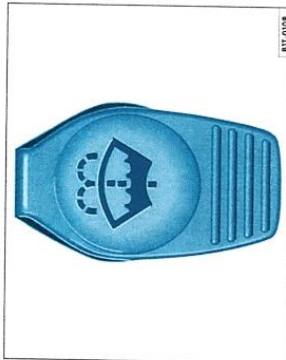


Fig. 86 In the electric motor compartment: Cap of the windshield washer fluid reservoir.

➤ Please read the introductory information and heed the Warnings and Notice ⚠ and ⓘ on page 142.

Check the windshield washer fluid level regularly and refill as necessary.

There is a filter screen in the filler neck of the windshield washer fluid reservoir. The screen helps to keep large particles and debris from getting into and clogging the windshield washer nozzles when adding windshield washer fluid. Take the screen out only to clean it. If the screen is damaged or missing, have it replaced immediately, otherwise the system may become clogged and not work properly.

- Open the electric motor hood ⚠ → page 313, Working in the electric motor compartment.
- The windshield washer fluid reservoir can be identified by the ⓘ symbol on its cap → fig. 86.
- Check if there is still enough windshield washer fluid in the reservoir.

- Refill with clear water (not distilled water) and an appropriate windshield washer fluid that is recommended by Volkswagen → ⓘ. Follow the directions on the container.
- In cold weather, always use a special windshield washer antifreeze solution that will help keep the water from freezing → ⚠.

Recommended cleaners

- For the warmer months, Windscreen Clear Summer G 052 184 A1 or equivalent. Mixing ratio 1:100 (1 part concentrate to 100 parts water) in the windshield washer reservoir.
- All-season Windscreen Clear G 052 164 A2 or equivalent. Mixing ratio in winter to 0 °F (-18 °C) about 1:2 (1 part concentrate to 2 parts water), otherwise, mixing ratio 1:4 in the windshield washer reservoir.

Filling capacity

Depending on vehicle equipment, the windshield washer fluid reservoir holds between 3.1–5.2 quarts (3–5 liters).

⚠ WARNING

Never mix antifreeze or similar additives into the windshield washer reservoir. This could produce an oily film on the windshield, which would considerably reduce visibility.

- Use clear water (not distilled water) with a cleaning solution recommended by Volkswagen.
- If necessary, blend with a suitable windshield washer fluid antifreeze agent.

ⓘ NOTICE

- Never mix cleaning solutions recommended by Volkswagen with other cleaning agents. If you do, this could cause sediments or other by-products that can clog the windshield washer nozzles.
- When refilling, do not confuse one type of operating liquid with another! Otherwise serious malfunctions and electric motor damage can occur!