

## Wiper/washer system

### Wiper switch

All wipe/wash functions can be switched on with the wiper switch as of terminal R (ignition lock in position 1).

The wiper switch can be switched to intermittent wipe, stage 1 and stage 2. These settings are coded by means of two lines leading to the general module. They are each switched to ground

On vehicles equipped with the special option automatic interval control (AIC) (as of March 1996), in the "intermittent" switch position, the intermittent wipe function is controlled by a rain sensor (refer to functional description for automatic interval control).

### Intermittent mode

A knurled wheel with a potentiometer is integrated in the wiper switch. This makes it possible to set four different intervals. These times are also controlled according to road speed. The faster the vehicle is driven, the shorter the interval.

On vehicles equipped with automatic interval control (AIC) (as of March 1996), the sensitivity of the rain sensor can be influenced with the thumbwheel.

### Wiper motor

The wiper motor is configured for two different wiper speeds. The load is switched via two external relays.

The end position (park position) of the wiper motor is recognized by means of a reset contact integrated in the motor. This contact switches ground to the general module when the motor has reached its end position.

The reset contact is also used for monitoring the wiper motor. If the contact signal is not received for 16 seconds with the wiper motor switched on (e.g. dry running), the wiper motor is switched off in order to protect it from overloading.

The wiper is not switched on again before it has been switched off and a lock-out time of 3 minutes has elapsed.

The wiper speed is set at the wiper switch. If automatic interval control is not installed, the wiper speed will be additionally controlled according to the road speed. The following settings apply:

Road speed	Switch set to stage 1	Switch set to stage 2
< 6 km/h	Intermittent wipe	Wiper motor at stage 1
> 6 km/h	Wiper motor at stage 1	Wiper motor at stage 2

When stage 2 is switched on, stage 1 cuts in at > 210 km/h to prevent the wiper arm from lifting.

On vehicles with the optional extra automatic interval control (AIC) (as of March 1996), the windscreen wipers are not controlled according to road speed.

### Wiper fold-out position for series E38

Since it is not possible to fold out the wiper arms in park position (e.g. to replace the wiper blades), the wiper arm can be positioned automatically in a fold-out position as required.

Proceed as follows for this purpose:

- Wiper switch set to first stage = Intermittent wipe
- If the wiper is in park position, switch ignition lock to position 0.

- The wiper motor moves the wiper arms into the fold-out position.

On series E39 vehicles, or vehicles equipped with optional extra automatic interval control (AIC) (as of March 1996), this fold-out function is not available.

### Windscreen intensive wash

The windscreen intensive wash function is switched on with the wiper switch and takes place automatically. Initially, a pump sprays wash fluid on to the windscreen. The windscreen wipers are switched on after a time delay. The wash pump is then switched on and the intensive wash fluid rinsed off. The wipers are switched on again for a short time in order to wipe the windscreen dry.

The intensive wash pump is driven by means of an external dual relay module which also switches the pump for the headlight wash function.

### Headlight washer

The headlight wash function is triggered every fifth time wash or intensive wash is activated when the headlight or parking lights are switched on. The headlights are sprayed twice.

The headlight wash function is blocked for 3 minutes at the end of a wash cycle.

Switching off terminal R resets the repeat lock-out and the counter for wash operations. When terminal R is switched on again with the lights on, the headlight wash function can be activated immediately.

The headlight wash pump is driven by means of an external dual relay module which also switches the pump for the intensive wash function.

### Windscreen wiper pressure control (ADV) for E38 series up to 3/98

Windscreen wiper pressure control is only installed E38 series vehicles up to 3/98.

The contact pressure of the windscreen wiper on the driver's side is set in five stages depending on the vehicle speed and the set wiper function. The following settings apply:

Road speed	Wiper switched off	Wiper switched on
< 6 km/h	Stage 0 if a higher stage was not previously active, otherwise stage 1.	Stage 0 if a higher stage was not previously active, otherwise stage 1.
6 - 100 km/h	Stage 1	Stage 1
100 - 140 km/h	Stage 1	Stage 2
140 - 180 km/h	Stage 2	Stage 3
> 180 km/h	Stage 3	Stage 4

The contact pressure is increased by one stage at a time when "wash" is activated.

The adjustment unit for windscreen wiper pressure control is positioned by means of a cam switch in the drive. This switch switches ground to the general module when a position (= stage) is reached.

To prevent blocking, the ADV motor is protected by the general module by means of a time-dependent cut-out facility. If the signal from the cam switch is not received due to a fault, the ADV motor is switched off after a certain time.

This cut-out function is cancelled by switching off terminal R.