



WINDSCREEN WASH/WIPE

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WINDSCREEN WASH/WIPE - Description

The windscreen wash/wipe system is operated by a stalk switch on the right side of the steering wheel. The stalk switch can be set to five positions that correspond to different functions:

- windscreen wiper off (standstill);
- intermittent operation;
- continuous slow operation;
- continuous medium-fast operation;
- temporary fast operation (unstable stalk position).

When the stalk switch is set to intermittent operation position, four different speeds can be selected by turning the relevant ring:

- slow intermittent;
- medium intermittent;
- medium-fast intermittent;
- fast intermittent.

If the car is equipped with a rain sensor, windscreen wiper operation is automatic and sweep frequency and speed alter according to the amount of water on the windscreen.

The rain sensor is activated by turning the stalk switch to 'intermittent operation' position and turning the ring to choose one of four levels of sensitivity:

- minimum sensitivity;
- medium sensitivity;
- high sensitivity;
- maximum sensitivity.

By adjusting the sensitivity, automatic windscreen wiper operation can be adjusted to specific visibility conditions, such as fog with condensation on the windscreen, spray thrown up by other vehicles, drizzle etc.

When the key is turned to STOP position, the rain sensor is deactivated and does not reactivate the next time the engine is started up. To reactivate the sensor, the stalk must be moved to another position and then back to the intermittent setting, or the sensitivity selection ring must be moved to another position.

The rain sensor is secured to the windscreen within the swept area of glass. It is controlled by an electronic control unit that also controls the windscreen wiper motor.

Each time the car is started, the rain sensor automatically stabilises (within about 2 minutes) at a temperature of 40° C in order to remove condensation from the detection surface and prevent ice formation.

The rain sensor is able to identify and adapt automatically to the presence of specific conditions that require different intervention sensitivities as follows:

- impurities on the detection surface (salt deposits, dirt, etc.)
- water smears caused by worn windscreen wiper blades
- differences between day and night (the human eye finds it less easy to deal with a wet windscreen surface by night than by day).

The windscreen wiper function is operated by pulling the stalk switch slightly toward the steering wheel. This action operates the washer pump. If the stalk switch is held in position, the windscreen wiper also operates (continuous operation). The windscreen wiper carries on working for a few sweeps after the stalk switch is released.

The entire system is governed by an electronic device which is responsible for controlling the intermittent function and also the windscreen wiper motor and washer pump.

The windscreen wash/wipe circuit and rain sensor circuit are protected by special fuses and controlled by an ignition-operated cut-out relay located in the junction unit.

The windscreen wiper and washer can be operated with the ignition key turned to ON.

WINDSCREEN WASH/WIPE - Functional description

The windscreen wiper control on the steering column switch unit H5 selects the various operating modes of the windscreen wash/wipe.

The stalk unit H5 is supplied at pin 3 of connector D from the ignition-operated line (INT/A) of the relay R1 protected by the fuse F14 : both are contained in the junction unit B1 .

The same line supplies the electronic device in the windscreen wiper motor N15 : - pin 3 of the connector B - and returns - from pin 1 of connector B - to the stalk unit H5 .

The windscreen wiper motor N15 is then connected to earth - pin 1 of connector A.

Depending on the pre-selected function, the stalk unit H5 (connector D) sends the following control signals to the internal electronic device to the windscreen wiper motor N15:

- from pin 3 of connector C for continuous fast operation: the signal reaches pin 5 of connector A of the motor N15 ;
- from pin 1 of connector D for continuous slow operation: the signal reaches pin 4 of connector A of motor N15 ;
- from pin 10 of connector D for intermittent/automatic operation: the signal reaches pin 2 of connector A of the motor N15 and the rain sensor K85 pin 5: this signal differs depending on the position of the intermittent function adjuster ring, which connects none, one or several resistors on the line, thus obtaining the different intermittent speeds.

When operated, the windscreen washer switch of the stalk unit H5 sends a signal from pin 5 of connector D to pin 4 of connector B of N15 : this controls the operation of the windscreen washer N20 - from pin 3 of connector A.

The same signal is also sent as a command to operate the headlamp washer delay unit R3 contained in B1 - pin 20 of connector F. (E3022 HEADLAMP WASHER).

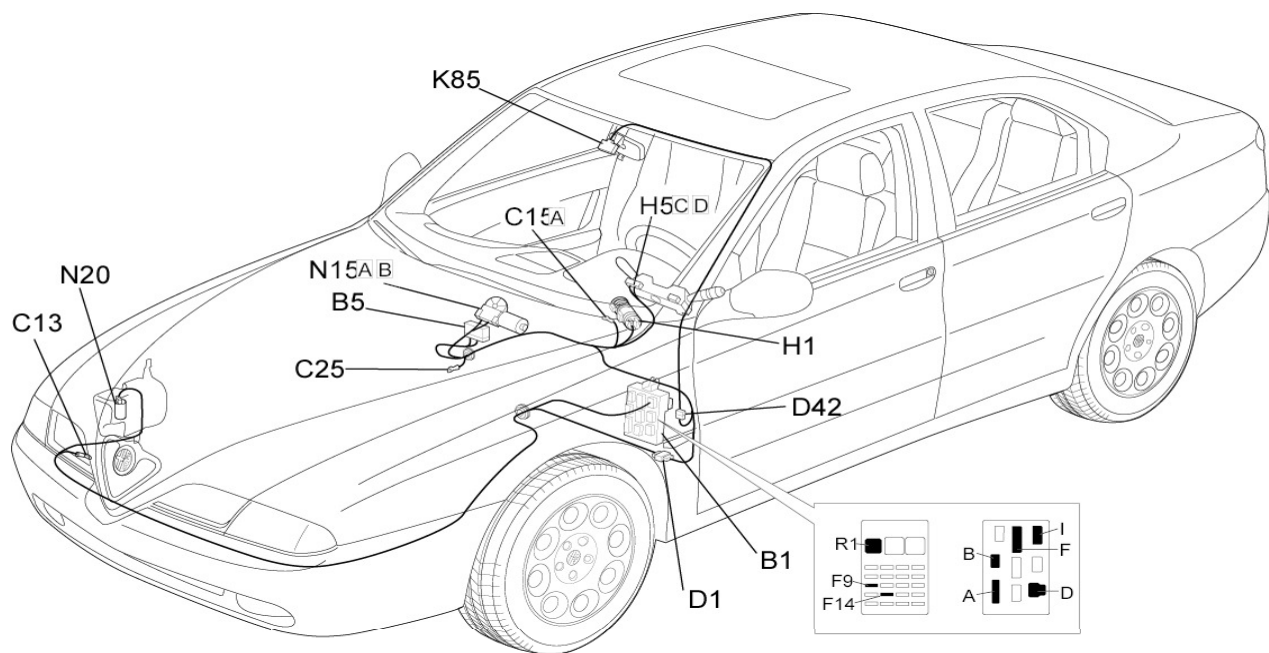
The system can also be connected to a rain sensor K85 which automatically adjusts the windscreen wiper sweep frequency.

The sensor K85 is supplied at pin 2 from the ignition-operated line (INT/A) of relay R1 protected by the fuse F9 : both are contained in the junction unit B1 ; pin 3 is earthed.

Pin 5 receives the intermittent/automatic operation signal coming from the stalk unit H5 : this enables the operation of the system and at the same time establishes the sensor's sensitivity.

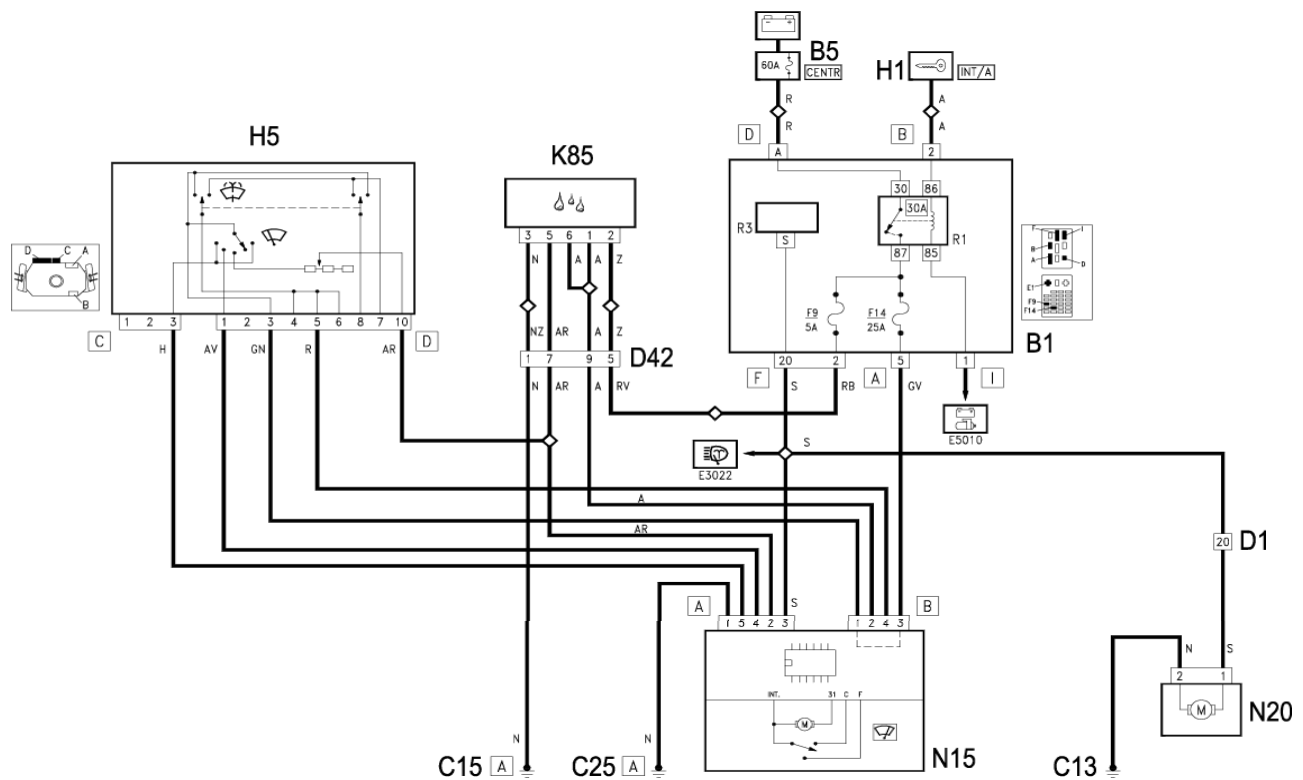
Pins 1 and 6 connect to the windscreen wiper motor N15 : - pin 2 connector B - indicating, in accordance with the logic described above, the type of automatic operation to be set.

WINDSCREEN WASH/WIPE - Location of components



Component code	Name	Assembly reference
B1	Junction unit	5505A
B2	Dashboard junction unit (CPL)	-
B2	Junction unit	-
B2	Junction unit	5505A
B5	MAXI FUSE box	-
B45	Luggage compartment junction unit (CVB)	-
B99	Battery fuses junction unit (CBA)	5530B
C10	Front left earth	-
C11	Right front earth	-
C13	Front earth on left side panel	5505A
C15	Facia earth, driver's side	-
C25	Earth on steering column	-
D1	Front-dash-board coupling	-
D6	Rear - front coupling	-
D19	Dashboard / battery coupling	-
D20	Dashboard-rear coupling	-
D42	Dashboard-courtesy lights coupling	-
H1	Ignition switch	5520A
H5	Steering column switch unit	5550A
K85	Rain sensor	-
N15	Windscreen wiper motor	-
N20	Windscreen washer pump motor	-
N20	Windscreen washer pump motor	5540B
N20	Windscreen washer pump motor	5540B
N20	Windscreen washer pump motor	5540B

WINDSCREEN WASH/WIPE - Wiring diagram



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B1	Junction unit	5505A
B2	Dashboard junction unit (CPL)	-
B2	Junction unit	-
B2	Junction unit	5505A
B5	MAXI FUSE box	-
B45	Luggage compartment junction unit (CVB)	-
B99	Battery fuses junction unit (CBA)	5530B
C10	Front left earth	-
C11	Right front earth	-
C13	Front earth on left side panel	5505A
C15	Facia earth, driver's side	-
C25	Earth on steering column	-
D1	Front-dash-board coupling	-
D6	Rear - front coupling	-
D19	Dashboard / battery coupling	-
D20	Dashboard-rear coupling	-
D42	Dashboard-courtesy lights coupling	-
H1	Ignition switch	5520A
H5	Steering column switch unit	5550A
K85	Rain sensor	-
N15	Windscreen wiper motor	-
N20	Windscreen washer pump motor	-
N20	Windscreen washer pump motor	5540B
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