



# TWO SPEED WIPERS: SETTING WIPER ARM PARK POSITION

R-R Silver Dawn, Silver Wraith, Bentley MKVI, R type

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I have presumed the cars are fitted with the original Lucas DR2 motor, if they have been converted to a Lucas DR3 the procedure is almost the same, I have also presumed the motor is working.

## PARKING OPERATION

This description is described as though the driver was viewing the blade movement from the driver seat and the windscreen is thoroughly wet. No attempt should be made to operate these wipers unless the screen is very wet.

When the wiper switch is turned to the off position, the blades will travel normally clockwise fully to the right hand side then move anti-clockwise to a position about 1400 hrs. and the move clockwise off the screen. The blades will park just on the chrome surround. Very often the blades will move clockwise off the chrome surround and finish parked on the paintwork below the chrome windscreen surround when the car is being driven under the influence of the wind. This situation is aggravated by slack in the wiper wheel boxes and rack.

Every attempt should be made to correct this situation if it happens on the road. This is achieved by marking the position of the blades with masking tape as a reference point, removing the blades and repositioning them slightly anti-clockwise and / or adjusting the parking switch knurled knob on the wiper motor. Sometimes this knurled knob adjuster is out of its operating range and the blades have to be repositioned (see below). Although in a static test with a wet screen the blades may park just at the bottom of the screen or just on the first section of the chrome surround, when the wipers are switched off with a wet screen and the car is moving the parking will be on the chrome surround.

The reason that the blades should not park if at all possible below the chrome surround is because upon starting the wipers the motor has to try to lift both blades over the hump of the chrome surround and the motor is almost in a stalled condition when trying to achieve this movement. Further to this, the rack mechanism and wheel boxes are under extreme load, as is the rubber wiper motor mounting. In short, either obtain a wiper blade park position just at the extreme bottom of the screen or just on the chrome strip when the screen is wet and the car is being driven.

## SWITCHING ON

At no time must the operating switch be set straight to fast speed from the off position. The slow speed must be selected and held until the blades have conducted at least two full sweeps of the screen before fast speed is selected. The reason for this is to enable the motor and mechanism to overcome the initial inertia upon starting, in the slowest speed, which gives the greatest torque and prevent any tendency to stall in the fast speed setting. Starting off with fast speed or operating fast speed on a relatively dry screen will cause very high current loads within the motor and the operating switch. If the motor still has a thermal internal switch operating it may also cut out.

When the operating switch is moved from the off position to the slow speed position the blades will move anti-clockwise from their parked position to approximately the 1400 hrs. position. They will then move clockwise until they reach the end of their normal stroke, returning on their anti-clockwise stroke as normal and work in the normal fashion.



## SETTING THE PARK POSITION

Remove the wiper blades and arms, originally the blades were flat types held on the arms with a rubber peg, it is almost certain these have been changed for a later type of blade and arm. A number of different arms and blades have been fitted over the years. All the different arms come off the spindle by lifting the arm and blade assembly off the screen and either working the arm off the spindle when it is held by an internal hidden clip or by lifting the clip carefully away from the recess at the back of the splined area of the spindle when the clip can be seen (normal type). You will see that as the arm has been placed onto the spindle the (normal type) clip on the arm drops into place on to the spindle behind the spline so securing the arm / blade assembly to the spindle.

## WIPER MOTOR MECHANISM MAINTENANCE

Remove the screws holding the alloy cover with the dome shape to the body of the wiper motor. Remove the grease covering the mechanism; be careful not to snag the wire coming from the parking switch at the top right hand position. You will see that the small knurled knob at the top right hand adjusts this switch. Have someone switch on the master switch, ignition and wiper motor operating switch to slow speed. Observe the mechanism working briefly then request your assistant to switch off the wiper operating switch and note that the mechanism does not stop until the parking switch trips its contacts. Start up the motor again if necessary and approximately measure the stroke of the rack going in and out of the metal rack tube. Switch off the master switch.

Remove the circlip holding the rack end crank to the crosshead just off centre of the gear wheel; be careful because the arrangement is spring loaded that the parts don't fly off. The spring is only light but you need to be aware. Note carefully the position of all the parts including the wavy washer. In particular, see if the shaft stub end connected to the gear wheel has a very small diameter adjusting washer fitted, sometimes these washers are missed because they appear to be part of the stub end where it joins the gear wheel. Disconnect the rack end from the crosshead. Look under the motor and observe the protruding gear wheel centre shaft with a retaining nut attached. Remove the nut and any washers then lift out the gear wheel from the case, Check to see if a small adjusting washer is fitted on the gear spindle shaft between the abutment of the case and the gear, again these washers are small and may appear to be part of the spindle shank. These small washers top and bottom on the gear shaft were for positioning the gear central to the worm drive coming out of the motor. Make sure you know the location of each part and clean all the parts.

Move the rack back and forth by hand in and out of the rack drive tube around the same measurement that you previously made when the unit was working. Do not over stroke the rack much beyond its normal working stroke as in the extreme you may disengage it from the wheel box at the right-hand end where the rack only just passes the right hand wheel box. With the arms and blades removed the movement of the rack should be smooth and fairly easy. Any stiffness is the result of jamming wheel boxes or a jamming rack, which must be investigated. With a little ingenuity you will be able to grease the rack drive tube from motor end by using a grease gun and holding a cloth around the end to close off the gap between the gun end and the tube whilst forcing some light grease into the tube. Do not over grease because excess can drip down from the wheel boxes onto the carpet inside the car, for the same reason do not use oil.

Place the clean gear back into its bush in the wiper motor and move the gear side to side to check for excess side movement in the bush. There should be no movement, excess movement will wear the main gear teeth, and they are not available. Refer to a later section if there is excessive bush wear.

Rebuild the mechanism in the reverse order and clean the parking switch carefully, pack the assembly particularly the bush into which the gear fits with good quality light grease, wheel bearing grease is ideal. Make sure you have replaced any adjusting washers and the circlip is correctly seated in its groove. Adjust the parking switch knurled adjuster until it is in its central position. Locate the worm drive end float adjuster, this is at the end of the drive shaft which actual comes out of the motor; the brass adjusting screw is on the outside of the case facing you as you look at the motor. You will find the screw adjusts up to a



rubbing block or shaped bush that contacts the end of the main drive shaft. Slacken off the screw about one quarter turn until the adjuster is not loading the shaft endwise, carefully screw up the adjuster lightly until it just end loads the shaft, back off the adjuster until there is just no end load about 1/16th of a turn at a guess. Replace the alloy cover and screws.

Switch on the master switch, ignition and wiper switch, the motor will start, then switch off the wiper operating switch, do not stop the wipers with the ignition or master switch. The wiper spindles will now have stopped at their parked position, refit the arms and blades so that the blades are parked just at the bottom of the screen. Wet the screen and keeping it wet adjust the parking knurled knob on the wiper motor to obtain the fine adjustment.

Observe the rubber motor mounting whilst the motor is running with arms / blades attached, make sure the mounting rubbers are in good condition. Ensure that the blades and arms are of the correct length and do not strike the chrome windscreen surround, which will severely wear or damage the rack and wheel box mechanisms.