Lagondaforum: LG 45 wiper motor amperage/wattage

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Written by bill at Jun 14, 2017 12:16 pm

Can anyone tell me, please, what is the wattage (or amperage) of the LG 45 wiper motor ? I suspect it is about 3 or 4 amps but I would like to be certain. I cannot find any way of successfully checking my existing motor.

I would like to fit a PWM (Pulse Width Modulation) controller to the wiper motor (out of sight behind the dashboard) in order to slow down the wiper speed in light or intermittent rain. The existing speed is very annoying ! Has anyone had any experience of making this modification or any advice on a good PWM controller to use ?

Thanks for any input

Re: LG 45 wiper motor amperage/wattage

Written by Bill LG45 at Jun 15, 2017 8:34 am

Hi Bill, I understand how this works and it will not create heat in the same way that using a resistor would to control the speed of a DC motor but I would still be concerned about the motor getting hot. Unless the motor has been rewound the windings will be old and have poor insulation and whilst it may work ok as is slowing it down for an extended period would still tend to make it run hot.

The poor old wiper motor gets to work pretty hard for a small motor as it is...so not something I would do.

The type of wiper arms and blades fitted to the LG45 were common in their day and I suppose considered acceptable then but they don't ever work very well even when in perfect condition...

I have found that if you clean the windscreen thoroughly and then apply "RainX" the water forms large globules and just rolls off the windscreen giving better vision than the clanky old wipers. I have used RainX for upwards of 10 years on my motorcycle helmet, boat windscreen and old cars and it does do what they say on the tin...a simple solution to the problem allowing the wipers to be turned off most of the time!

Hope you are enjoying the Summer weather, cheers

Bill

Re: LG 45 wiper motor amperage/wattage

Written by bill at Jun 15, 2017 10:34 am

Thanks Bill for the comments. Yes, I have tried RainX before.

I understand your comments about an old motor and I must admit I am aware of this. On a journey in rain I often check the heat of the motor with my hand under the dashboard !

However if I fitted a PWM and ran the wiper motor at 50% speed for most of the time surely this would mean that the motor would have a much easier time - as the pulses would mean that it was only working half as hard ?

I agree that you would be correct if, by slowing down the motor, I was therefore encouraged to leave the wiper on for longer periods. I dont think I would do this. At present the wipers seem to be quite fast for ordinary rain (I dont think the motor has a problem) . If I could generally slow the wipers by about 25% (and not leave them on longer than at present) then that would surely save some wear on the motor ?

Re: LG 45 wiper motor amperage/wattage

Written by Bill LG45 at Jun 15, 2017 4:51 pm

Hi Bill,

A motor draws a much higher current at start up ("inrush current") this only last momentarily and dies away to the normal running current as the motor reaches running speed, to be honest I am not sure what would happen to a DC brush motor with this PWM device...I found some info on the web, take a look at this link:

http://www.electronics-tutorials.ws/blog/pulse-width-modulation.html

As I understand it, with a DC motor the PWM effectively reduces the effective voltage at the terminals and hence the motor runs slower. Power = voltage X current so with less voltage the current will increase unless the load on the motor is proportionally reduced.

I see your argument about running slower for half the time, then motor should do less work at a lower velocity and also power =

work / time but I suggest the actual load on the motor is largely from the friction resistance from driving the cable mechanism and that part of the load is not directly related to velocity especially when cold, due to the grease lubrication for the cable and gears hence the load will not be proportional to the speed.

I believe the current may well increase.

Coming back to running too fast, on reflection this seems odd. Have you checked the voltage at the terminals as the wiper motor may be getting more than 12 volts, perhaps the voltage regulator on your car is not working correctly?

Hope the above helps

Bill

Re: LG 45 wiper motor amperage/wattage

Written by h14 at Jun 15, 2017 7:47 pm

Bill,

Seems an unusual problem, most complain at how lethargic their pre-war wipers are. So back to first principles...is the wiper motor the original (presumably Berkshire) one? The casings are mazak, which can fatigue badly...enough to render the motor irreparable...so I daresay some cars have replacement wiper motors.

Laurence

Re: LG 45 wiper motor amperage/wattage

Written by bill at Jun 16, 2017 8:48 am

Bill and Laurence thanks very much for the replies. Yes it is the original Berkshire motor. I replaced the cable about 5 years ago when the original broke on a journey in pouring rain from Dorset to Wales (2 hours or so moving the wipers by hand was no fun at all !). After replacing the cable with a new one the wipers seemed to work much better !

I take your point that maybe the motor is running too fast and will check the voltage next.

Many thanks.

Re: LG 45 wiper motor amperage/wattage

Written by h14 at Jun 18, 2017 11:08 am

Hi Bill,

Hopefully your charging test will reveal that your voltage regulator needs adjusting down to a lower voltage.

Another possibility may be that internal insulation has broken down in the wiper motor leading to a partial short circuit. I do have a Berkshire motor in pieces, but annoyingly both my multimeters are playing up, otherwise I could have given you resistance readings for the field coils and armature. It does look like the field coils have 4 connections, so you could do a basic test to compare the resistance of each.

With those disconnected from the brush terminals, you could then connect an ohmmeter to those terminals; slowly rotate the armature...then that should show steady resistance readings. Also worth checking in both cases for shorting to the iron cores.

Wiper cables and wheelboxes are never included in service schedules, a major reason for them quite possibly never having been re-lubricated since new. The ancient grease congeals and undoubtedly then gives more resistance to movement than would be the case if the components had no lubrication at all. There is a remote possibility that your replacement cable is more efficient than a new Berkshire one, but I doubt that would result in a seriously higher wiper speed resulting.

Laurence
