Hi Jack, the first thing you will need to do is strip down the replacement wiper motor and fully degrease it until everything is clean and free. You can then replace the perished insulated wire. I used some trailer flex which contained 6 PVC insulated wires. The colours varied a little, so if you need a Concours result, you will need to source reproduction or NOS wire. You can then lightly oil the motor shaft (a drop or two at each end typically) and lightly grease the high-load, low-speed parts like the worm, worm gear, and worm gear shaft, as you re-assemble the motor. You can also take the opportunity to identify which wire corresponds to each of the numbers shown in the bottom wiring diagram above before you close the motor up. You should then mark each wire with a corresponding label. You can also confirm some of these by metering. More on this shortly.

Normal Operation: During normal wiping operation of either low or high speed, the motor always operates in the same forward direction. To achieve low speed operation 12 volts is applied to the brushes which power the armature, and 12 volts is applied to the field coil. Reversing the polarity of either the armature or field, but not both, will cause the motor to operate in the opposite direction. Reversing both will see the motor continue to operate in the same direction.

High Speed: To speed up the motor, a resistor is introduced into the circuit of the field winding (I think it is the white insulated wire on the outside of the field coil winding in the photo). When this resistor is used in series, the overall field current falls, which reduces the flux density. Counter intuitively, this makes the motor spin faster because the armature will now have to spin faster to generate the same back EMF, that is equal to the applied voltage. A reduction in field flux density results in a reduction in motor torque also. If you think about it, this is not such an issue at higher motor speeds as they are associated with more rain, and thus lots of wiper blade lubrication against the glass. Where you really need the torque is at low speed against drying glass.

Parking: When the switch is moved to park, two electrical things happen that allow the motor to run backwards, and consequently increase the stroke of the rack via the clever offset cam arrangement, which will increase the wiper sweep. The motor field polarity is reversed by the switch swapping the +/- between number white 2 and number brown 4 on the motor field winding, and the earth return that was used by the armature and field is now disconnected. To continue to run, the motor uses the red wire that goes to a limit switch in the motor adjacent to the worm gear. When the wiper crank reaches a limit, the motor stops. If the switch gets dirty, turning the wiper switch to park will see the wipers immediately stop wherever they are.

The switch thus stops the motor before the eccentric reaches the equivalent of bottom dead centre (BDC), thus effecting a "park" with the wipers sitting lower than they would in operation. How far the cable is permitted to move back before opening the switch is adjusted via the knurled brass knob on the outside of the assembly just in front of the switch. This moves the switch back or forth when turned. If the cable was permitted to come back too far, I think the worm gear could complete a full revolution, and the wipers would travel forward and back again with a much longer stroke than is intended in normal operation.

Perhaps start by looking at Ronny's video:

Part 1 of 4

https://www.youtube.com/watch?v=6fIaFH-WkZo
Part 2 of 4
https://www.youtube.com/watch?v=d_5UeX0omDg

Part 3 of 4

https://www.youtube.com/watch?v=pCeacP5LnNY

Part 4 of 4
https://www.youtube.com/watch?v=f3Sd1SGxKfU

Using the same numbering as on the motor in the diagram in the thread above,

With motor connected normally to wiring as Per PRS7:

	OFF / Parking	Low Speed	High Speed
Red 1	Open	Earth	Earth
White 2	Earth Through Parking Switch	+12v	+12v
Orange 3	Open	Open	+12v from Blue 5
Brown 4	+12V from Blue 5	Earth	Floating at +12v when motor parked, and 0v < Brown 4 < +12v while parking.
Blue 5	+12v back-fed from Green 6 through thermal cut-out	+12v back-fed from Green 6 through thermal cut-out	+12v back-fed from Green 6 through thermal cut-out
Green 6	+12v	+12v	+12v

Now based on all of the above, you could meter the motor leads, and should find that three show continuity to each other, and the remaining 3 also show continuity to each other. If you were on the moon we could develop a test that would help you identify which was which without taking the motor apart, but as you need to anyway, you will be able to identify the corresponding motor wires to the bottom diagram above without too much bother.

The car is trickier. With the motor disconnected, and the wiper switch in the off position, turn the ignition on and test each wire with a test lamp (a 12volt bulb as load as opposed to a meter). That should guard against any floating voltages. Only one wire should be live all the time, regardless of switch position. That wire should be your Green 6. Mark that wire.

If any more are live, then that does not compute. Assuming none are,

With motor disconnected, and Green 6 identified, turn the power off and meter for continuity. Car wiring should be for PRS7:

	OFF / Parking	Low Speed	High Speed
Red 1	Continuity to White 2	Continuity to Earth/Brown 4	Continuity to Earth/Orange 3
White 2	Continuity to Red 1	Continuity to Blue 5	Continuity to Blue 5
Orange 3	Open	Open	Continuity to Earth /Red 1
Brown 4	Continuity to Blue 5	Continuity to Earth/Red 1	Open
Blue 5	Continuity to Brown 4	Continuity to White 2	Continuity to White 2

Green 6 (done energised)	+12v	+12v	+12v

By rotating the wiper switch from off to low and then high, it should be possible to identify which is which. Let’s hope I’m right and that this helps.