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**Due to the work required disconnect Battery before starting.**

I had read quite a lot about removing the Heater Unit from a SE5a. The main comment seemed to be that the Car was build around the Heater. I found that the fear of removing the Heater Unit was unfounded. Those who said that removing the Heater Unit from a Scimitar was very difficult had obviously not tried it on some more modern cars. If they had tried to do it on some modern day cars they would realise that removing a Heater Unit from a Scimitar was easy in comparison although not a simple job and one that should not be undertaken believing it to be simple. The main problem was due to me being an Old Fart and where the Heater is positioned means that you need to bend, kneel, twist etc in some tight areas. My brain cell still thinks I am 21 but a few hours of this and when I awake the next morning I am reminded that I am an old fart as it takes a while to get the old joints working. I think I know what lizards must feel like as I feel I need to lie out on the rocks in the sun in the morning for a while to get all my bits working. The manual for the Scimitar suggests that amongst other things the Windscreen needs to be removed. This is not required as I managed to remove the unit via the Driver Footwell (Right Hand Drive Car). While this is not a particularly difficult job it is one that should not be considered lightly. This is partly due to the requirement of having to move the Dashboard complete with Gauges about 12 inches (300 mm) and due to the wiring possibly being a bit fragile due to age there would be a real possibility of causing problems with the wiring. There are opinions that the Lucas wiring is very poor. I do not believe this to be true. It was the technology of the time and what will modern day cars wiring be like after 30 plus years? although the Reliant designers did not make the greatest Car Electric design. This fear of suspect wiring was not a problem for me as I had completely rewired the Car. Also the plastic that the dash is made of is thin and can be easily damaged so make sure it is well supported. Removing the Heater Unit took me about seven hours. This was mainly due to some bolts being rusted and difficult to remove. Any difficult Bolts I normally remove with an Angle Grinder but due to their position it was not possible to get an Angle Grinder at the offending bolts so I had to use a Hacksaw Blade. Not normally a problem but the difficult position of the Bolts meant that there was not much room to move the Hacksaw Blade and so it took quite some time cutting off the offending Bolts. The other problem was as I had never done this before and I had to work out how and what to unbolt etc. Hopefully my experience will help you to remove quicker. I would expect that the Heater Unit could be removed in about four to five hours ***assuming there are no difficult Bolts*** etc. My explanation below makes comments like remove this Bolt, Screw etc. This seems such an easy phrase but as advised there could be some real awkward ones. The advice below will not give exact details of every screw, bolt etc to remove as when removing items it should be self explanatory. The position of some of the screws may differ to the explanation below. The difference will not be great. The reason I have mentioned this is because I had a Heater Unit out of a 1974 SE5a and my Scimitar is a 1972 SE5a and there were some slight differences. One of the Tools you will need is a very long crosshead screwdriver, the longer the better ( At least 15 inches long, See below ). This is for removing the Demist Duct from the Top of the Heater Unit. While

my experience of a SE5a is limited to only two (My 1972 Car and a 1974 Car) there were slight changes between the two. Possibly due to previous owners and possibly due to Reliant changing the way things were done.

### **Start by ensuring that you have disconnected the Battery.**

You will find it easier by removing the Drivers Seat, not essential but it will make life easier. Then remove the Centre Console. It may be difficult to get the Console over the Handbrake so you will need to disconnect the Handbrake Cables from the Levers that comes out of the Rear Brake Drums. This will allow the Handbrake to lift higher and so allowing the Console to be removed. Remove the Steering Wheel, the Cover over the Indicator Switch then remove the Indicator Switch assembly. This can be left connected and tied out of the way. Remove the Heater Control Knobs, these are held on buy small Allen Grub Screws. If you slide the controls fully up you will see the Allen Screws about half an inch along at the bottom of the Knobs, then remove the escutcheon. Remove the Radio and then all the screws holding the Dash in place. There are a number of them and there could be some below and to the side of the Steering Column and one at the left hidden by the Glove Box Lid. Also there are some at the bottom where the Console fits. Once you have removed all the screws etc give the Dash a little wiggle to make sure you have not missed any screws. When you are happy that there are no screws holding the dash move it away as far as possible. It will need to be about 12 inches (300 mm) at the bottom. You could possible manage with only a couple of inches at the Top it's the clearance at the bottom that is needed. As it moves disconnect the Speedo Cable as soon as possible to prevent straining the cable. The Speedo cable is held on by a clip. This clip is engaged into a grove in the end of the speedo cable so you will need to push it in to release the cable, you push it where it is closest to the speedo. Take care when moving the Dash as there is a small plastic pipe (Oil pressure) you do not want to damage or kink it and you want to take care of the wiring. Remove the two centre eyeball vents. These are held on by three screws each and when removed make sure that the ducting tubes come out with them. Now remove the Cable to the centre Heater Control (Ram Air) this is held on by a clip holding the outer part of the cable and when the clip is removed the inner cable can be slid off the Control Shaft, this may require a bit of levering with a screwdriver. Now remove the six bolts (three either side) that hold the Heater Unit in place. These are the bolts that caused my problems. The nuts for these bolts are welded onto small metal plates that are riveted onto the bulkhead on the Engine side of the bulkhead. The rivets will break off if the nuts are rusted onto the bolts causing the nuts/plates to turn, good luck. Now remove the screw, screws that hold the ducting at the top of the Heater Unit to the bulkhead. (On my 1972 SE5a there was only one screw in the middle, on the 1974 Car there were two). Once the bolts and screws are removed you should be able to wiggle the Heater Unit slightly. It may seem a bit stiff as there is some tape holding/sealing the unit to the bulkhead. Now remove the Water Pipes that connect to the Heater Unit. These are accessible via the Engine Compartment. It may seem strange that I have suggested removing the Water Pipes at this stage, reason being you may have decided before now not to complete the work and put it back together and gone for a beer. The removal of the water pipes can be a bit of a problem due to their position. Removing the Air Filter on the Carburettor will help access. If you need to use the Car while you are sorting the Heater Unit the Water Pipe from the Water Pump can be fitted to the Inlet Manifold but make sure it is not going to make contact with the Exhaust. Once the Water Pipes are removed the Heater Unit should

be able to be moved more. Have some rags at the ready as there will be some water in the Heater Unit and this water will come out and soak the Carpet. Once the Heater Unit is moved away from the Bulkhead far enough for the Water Pipes to clear the exit hole in the Bulkhead you will need to turn it slightly clockwise (as viewed from the Drivers Footwell) as the Demist Duct at the top of the Unit is located up and under the hole in the bulkhead. Once the Demist Duct has cleared the bulkhead you will need to turn the Heater Unit anticlockwise slightly. This is needed as you will now need to remove this Demist Duct, there are four screws holding it. If it was the same as mine some of these four screws were difficult to remove. These are the screws that you needed the long screwdriver for. Once the Demist Duct is loose you will now be able to slide the main Heater Unit out via the Drivers Footwell. When doing this make sure that the left Heater Control (Screen, Car) is in the up position. This is due to a flap at the bottom of the Heater Unit needing to be in the closed (Up) position so it does not catch on anything. You will need to wiggle, pull, wiggle, pull the Heater Unit toward the Drivers footwell, it will come out. You may need to bend the frame that held the eyeball vents. You will not need to bend it so much to cause damage as the main problem is the width of the Heater Unit from the front right edge to the water pipes. Once the Heater Unit is removed remove the Demist Duct that you unscrewed from the top of the Heater Unit. Now that was easy wasn't it?.

Once Heater Unit out take outside and give it a good shake. It will be full of many years of all sorts of stuff (I found a two shilling piece in mine). Back to the workbench with it then remove the end cover (The end where the Water Pipes are). To remove this end cover undo all of the screws you can find including the ones on the edge. Before trying to remove the cover you will also need to remove two spring clips. One is at this covers end and there is another at the other end. These clips hold the hot/cold and car/screen flaps. Once all removed the end cover can now be separated from the main Heater Unit and as it comes away the Heater Water Matrix will come off with it and can then be separated from the end cover. By now it should be obvious what bit does what. You should notice what's left of a sponge type tape that will be rotten, more about this later. The Heater Water Matrix should be taken to your nearest friendly Vehicle Radiator Specialist who can test and advise on its condition. My thoughts are if you are going to go to this much effort it would be best if the Matrix Core was replaced. Not expensive as it's only small. One idea would be to remove the Heater Water Valve. This is the Valve that is part of one of the Water Pipes going into the Heater Matrix. If you observe how the hot/cold operation of the Heater works you will notice that this valve serves no real purpose apart from having the ability to leak as the hot/cold flap inside the main Heater Unit directs the air through or passed the Heater Matrix. You could get this done when the Matrix is at the Radiator Specialist or you could do it yourself. A 2 pence piece almost fits but if you file the edge off the coin it will fit perfectly. All you need to do is to solder it in place. You will need a blowtorch as it will be to much for a soldering iron. Once the Matrix is sorted and the main Heater unit cleaned, painted etc its time to reassemble. Remember when you dismantled the Heater Unit you found what was left of some sponge tape. This was there to seal some gaps in the unit and should be replaced as one of the main improvements you can make to the Heater Unit is to replace this tape. The idea is that any air flow from the Blower Motors etc will need to go where you want it to do the most good. That is when you require warmth you will want as much

air to pass through the Heater Matrix and not around it. So when reassembling put some new tape around the Matrix so that it fits snugly into the main Heater Unit. Put some on the edge of the hot/cold and car/screen flaps so when they are in the up or down position the tape will make a good seal and it will also eliminate the possibility of the flaps rattling on the main Heater Unit. Once the Heater Unit is reassembled check for the adjustment of the hot/cold and car/screen flaps in relation to the Main Heater Controls. Now its time to refit the Heater Unit.

As all the good books say reassembly is the reverse of the above. Not strictly true this time. Before starting clean out all the airways, i.e. the Demist Vents etc. A flexible curtain rod is one thing to use as it will bend into all the awkward places. Also any holes that may be found should be blocked up with some sound sealing stuff as even the smallest hole lets in quite a bit of noise. Start by fitting the Demist Duct into and under where it belongs. Make sure that you remember to stick some of the sealing tape to the edges of this Demist Duct to ensure a good seal. Do not fit any screws yet just hold it in place with a bit of tape. The reason for doing this is it's a real sod to locate when the main Heater Unit is in the way ( Don't ask me how I know, I just know ! ). Wiggle twist etc the Heater Unit into its approximate position, remembering to have the bottom flap closed and to bend the part that holds the eyeball vents, then get the Water Pipes through the holes in the bulkhead. The rest is easy. Loosely fit a couple of bolts that hold the Heater Unit to the bulkhead then locate the Demist Duct and screw in place ( With the long screwdriver ). Now fit the other bolts that hold the Heater Unit to the bulkhead. I will leave it to you to what bolts etc to use if you have had to saw off the old bolts. When refitting the eyeball vents fit the left one first as if you fit the right one first it gets in the way and the glove box gets in the way from the other side. Before fitting the eyeball vents check that the felt type seal is intact as you will need a good seal to prevent draughts. Refit the Ram Air cable and adjust. You may need to remove the panel on the Engine side of the bulkhead to ensure you have correct adjustment. Adjust so the vent is closed when the Interior Control Lever is fully up. This will ensure that there are no draughts when the Lever is in the Off position. This cover on the bulkhead is very easy to remove ( Short Stubby Screwdriver ) but you may need to remove the Carburettor Air Cleaner for better access. You will need to remove the Air Cleaner anyway to get at the water pipes. It may be a good idea to remove this cover before fitting the Heater Unit as the space behind the cover will/could be full of debris etc so a good clean will be required. You may have noticed some duct/duck type tape when removing the Heater Unit. I suspect that was there to ensure a good seal between the Heater Unit and the Bulkhead so a good idea to fit some new and stick some sound sealing stuff over the bolts to ensure a good seal from noise. It is surprising how even the smallest hole lets through a lot of noise. Refit everything else remembering to refit the Speedo Cable before pushing the Dashboard into place. When all back together refit the rubber Water Pipes to the Heater Pipes that come out of the dashboard. These are not in the easiest of places to get at but if you use some Jubilee Clips that have hex ends you will be able to get a small socket with a long extension to tighten from the left side of the car. You may need someone to hold them as until tight they will try to turn. I always use proper Jubilee Clips (As made by Jubilee) as they are a better quality, the ends are 7mm. Don't forget to check for leaks after the Engine is Hot and keep checking for the next 100 miles or so. Good idea to carry some spare water for a while.

As you have gone to all this effort why not sort the Blower Motors. Easy to do. Remove the units from the footwells ( Making note of the wire connections, there are three ) then remove the Motor Units from these side panels. Undo the Allen Screw that holds the impeller to the Motor Shaft, best if you put the Allen Key through the duct and then through one of the gaps in the impeller. You will need to clean the Motor Shaft to be able to slide the impeller off. Once removed undo the two nuts that hold the Blower Motor to the Duct. Push the bolts through and out. Do not move the nuts at the other end of these screws as when reassembled they may foul on the Impeller. The Motor can now be disassembled. Note that two springs will fall out. These two springs are used to hold the Motor Brush assembly in place. When removing the armature it may seem stuck, this is because the magnet in the Motor casing will try to oppose its removal. Once Motor disassembled clean the shafts, armature, bearings etc. Apply some oil to the bearings ( Not to much ) and reassemble. Push the screws through the bottom Motor case, slide the springs over the screws then fit the Brush assembly and then make sure that the screws go through the two locators in the Main Motor body. This will be obvious when you do it. Fit the other end of the Motor case and then fit the two spacers over the screws then fit the Duct and the two nuts. Make sure that when you refit the Impeller the screw ends do not foul the Impeller. When testing I thought that the motors were going in the wrong direction as the rotation showed the air being drawn into the Impellers. I thought that the Air from the Impellers should be drawn outwards,. Investigation proved that they were rotating correctly. The principle is due to the Vortex created by a Tangential Fan within a Housing !!! I read about two sentences of the principle then my head started to hurt but the rotation was correct, just to prove I measured the Air Speed from the units and if I reversed the Blower Motor connections the Air Speed decreased by 70% !. Now refit the assembly to the panels fitting some of the sealing tape between the units and the panels. Check the eyeball vents to ensure that they seal OK then refit complete unit back into where they belong in the footwells remembering to connect the three wires. Note that the units are left and right handed. The vent that connects to the flexible pipe that goes to the heater unit should be nearest the bulkhead. Refit the flexible pipes from the Heater Unit to the footwell units ensuring a good seal. You are now ready for some warmth in the Winter and some Cool Air in the Summer and don't you deserve some comfort after all this work.