

# GROUP SEVEN

1st Edition

## WINDSCREEN AND WIPERS

### Assemblies included In this group: -

7.1	K3601145AB	WINDSCREEN WASHER
7.2	K3601144AA	WIPER LINKAGE ASSEMBLY
7.3	K3601151AA	WINDSCREEN MOUNTING BRACKETS
7.4	K3601148AA	WINDSCREEN ASSEMBLY
7.5	K3601152AA	WIPER ARMS (RIGHT HAND VEHICLES ONLY)
	K3601208AA	WIPER ARMS (LEFT HAND VEHICLES ONLY)

### Tools required for assembly of this group: -

Side cutter	10mm Socket	Torque wrench (range 5-50Nm)
10mm Spanner	Crimping tool	22mm Socket
Super Glue	Silicone	Masking Tape
Pen/Marker	Spirit Level	Drill Machine
5mm Drill bit	6mm Drill bit	Leather punch

**K3601152AA/K3601208AA  
WIPER ARMS**

**K3601148AA WINDSCREEN  
ASSEMBLY**

**K3601145AB WINDSCREEN  
WASHER**



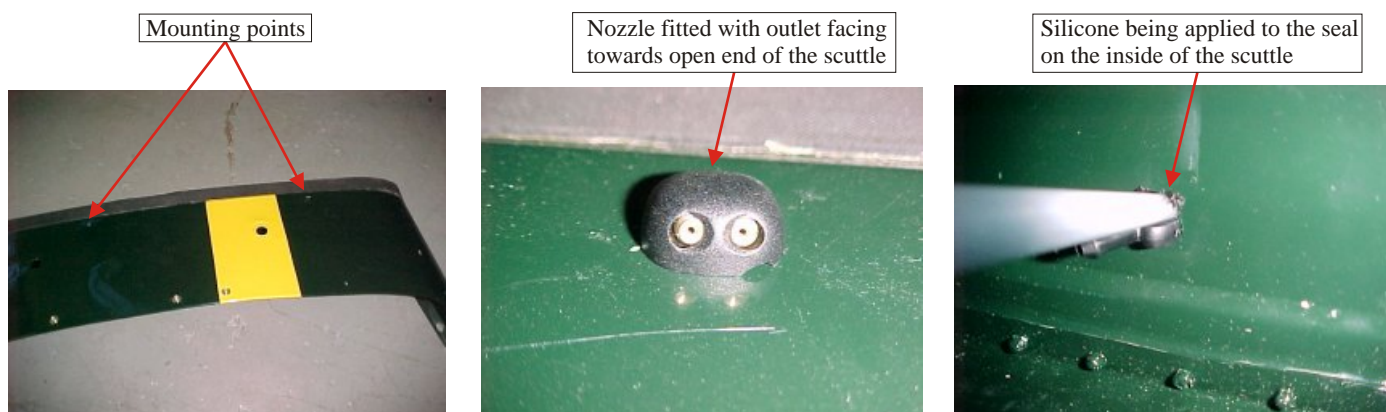
**K3601151AA WINDSCREEN  
MOUNTING BRACKETS**

## 7:1 WINDSCREEN WASHER - K3601145AB

Components in this assembly		Qty	Part Number
i	Setscrew M6x12	2	B5358077AA
ii	Nut M6 Nyloc	4	B5358078AA
iii	Washer 6mm flat	4	B5358090AA
iv	Nozzle - washer	2	B5451221AA
v	T-piece (wash bottle)	1	B5451222AA
vi	Tubing wash windscreen	0.85m	B5451223AA
vii	W/scr washer valve	1	B5451249AA
viii	Grommet	1	B5451330AA
ix	Washer bottle assembly	1	M3551011AA

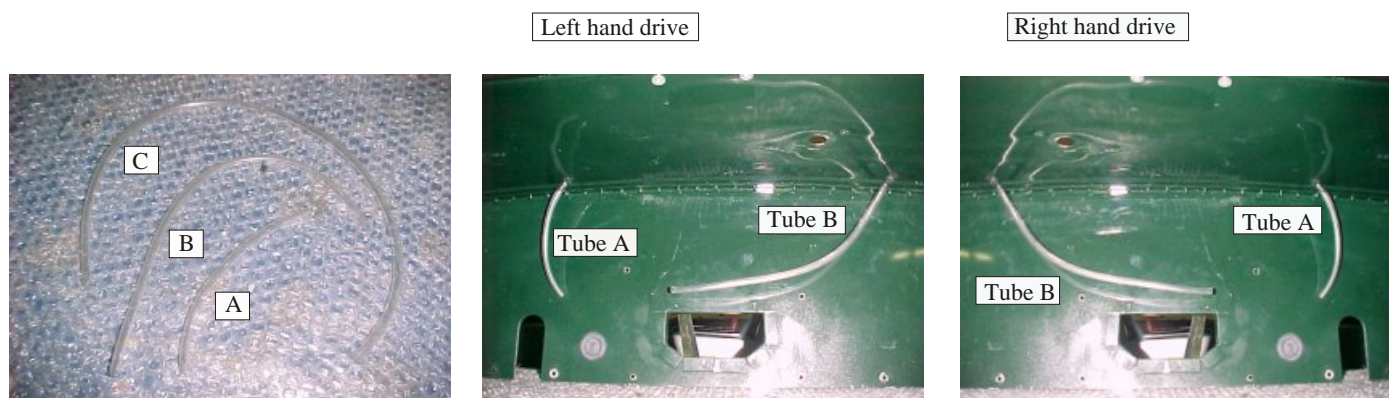
### Windscreen washer fitting procedure

1. Fit nozzles into the scuttle with the brass water outlets pointing towards the open end of the scuttle. Seal the underside of the nozzle mounting hole with silicone. This helps in preventing water from entering the cockpit when the washer is functioning.



2. Cut the clear PVC tubing into three sections of the following lengths, 150mm (labelled A), 320mm (labelled B) and 515mm (labelled C).

3. Fit tube A to the left hand nozzle and fit tube B to the right hand nozzle if the vehicle is a Left hand drive. Reverse the fitting positions of tubes A and B to the nozzle if the vehicle is right hand drive.



**Windscreen washer fitting procedure continue**

4. Fit the 'T' piece to the free ends of tube A and tube B. Fit tube C to the free end of the 'T' piece.



**Bond PVC tube to 'T' piece, nozzle and valve using superglue**



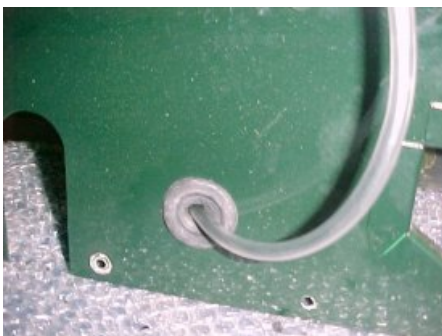
5. Using a leather punch, punch a 5mm hole into the grommet and then fit the grommet to the scuttle.



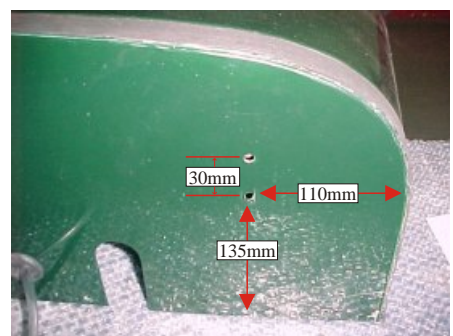
6. Pass the free end of tube C through the grommet.

7. Drill two 6mm holes for mounting the washer bottle to the scuttle as illustrated below.

inside the scuttle



outside the scuttle



8. Remove the mounting bracket from the washer bottle, this is achieved by sliding the bracket towards the bottom of the bottle and lifting the bracket away from the bottle.

9. Fit the bracket to the scuttle using two M6x12 setscrews, four 6mm washers and two 6mm Nyloc nuts.



**Do Not tighten at this stage.**

bracket to scuttle

inside the scuttle



## Windscreen washer fitting procedure continue



The following steps should only be carried out once the scuttle is fitted.

10. Ensure that the chassis is level then using a spirit level ensure the top of the bracket is horizontal. Torque bolts to 10Nm.



11. Fit the washer bottle to the mounting bracket. Fit the free end of tube C to the pump attached to the washer bottle. Cut tube C 100mm from the end that is attached to the pump. Fit the washer valve to tube C with the arrow on the valve pointing away from the washer bottle.



12. Route the white wire and brown wires insulated in a black PVC sleeve to operate the washer pump. Pass the wiring through the grommet fitted in point #5. Run wiring with tube C.

13. Connect to washer bottle pump. Cable the wiring to tube C.

inside the scuttle



outside scuttle



## 7:2 WIPER LINKAGE ASSEMBLY - K3601144AA

Components in this assembly		Qty	Part Number
i	Washer 16mm flat	2	B5358037AA
ii	Nut M6 nylock	1	B3538078AA
iii	Wiper boss nut cover	2	B5451203AA
iv	Wiper boss nut	2	B5451213AA
v	Boss wiper pivot	2	M3101060AA
vi	Wiper Linkage assembly	1	M3101075AA



For illustration purposes, the linkage arm is not mounted to the scuttle.

### Procedure to modify wiper linkage for left hand drive vehicle only

1. Place linkage assembly on the workbench with the wiper crank arm on your left hand side.

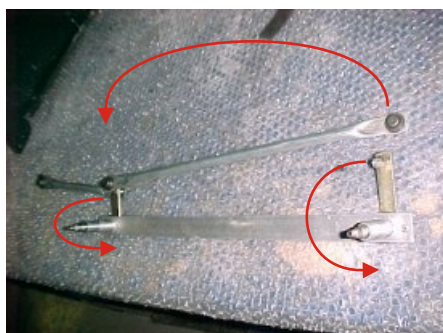
2. Disconnect linkage at point illustrated below.



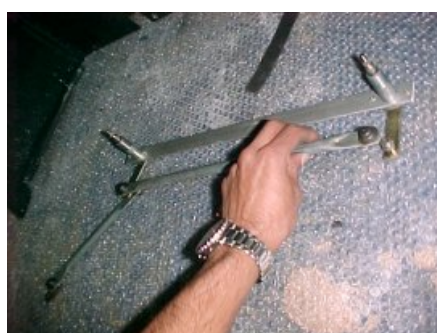
3. Rotate arm 360° and reconnect linkage.

4. Rotate the linkage assembly so that the wiper crank arm is on your right hand side. The linkage assembly is now ready for a left hand drive vehicle.

BEFORE



AFTER



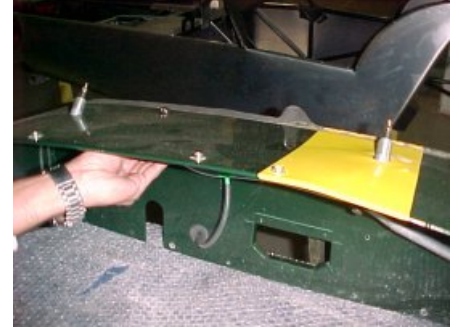
## Wiper linkage assembly fitting procedure

1. Fit a wiper boss onto each pivot, ensuring the flat surface is up against the flat aluminium bar.



The wiper boss are matched in pairs

2. Fit linkage assembly with pivots protruding the pre-cut holes in the scuttle.



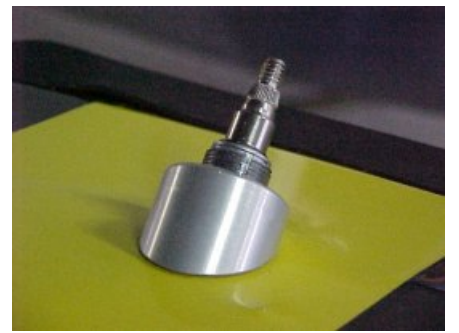
The wiper crank arm of the wiper linkage assembly should be on the passenger side of the vehicle.

3. Fit the remaining bosses on the wiper pivot, so that the angled surface is on the scuttle.

Left hand drive



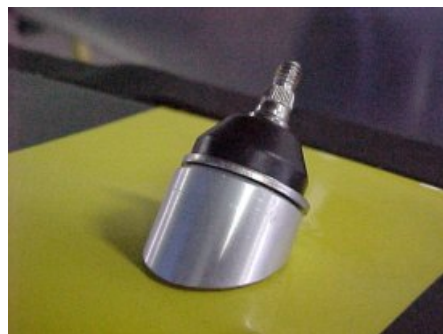
Right hand drive



4. Fit one 16mm washer and one 16mm nut on each pivot. Torque nut to 8Nm.

5. Fit wiper boss nut cover to each nut as illustrated below.

6. Scuttle is now ready to be fitted to the vehicle provided that all electrical components are fitted to the dashboard and the wiring harness has been fully installed and tested.

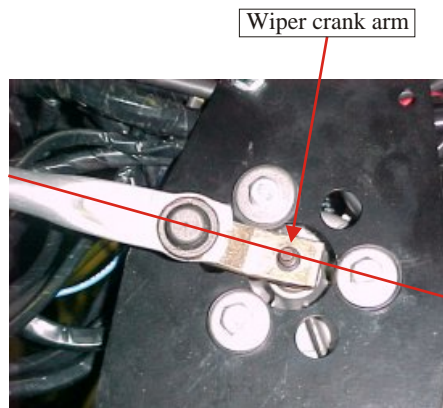


## Wiper linkage assembly fitting procedure continue

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7. Once the scuttle is fitted. Switch wiper motor on and off so that the wiper motor drive shaft stops in it's rest position.

8. Connect the wiper crank arm of the linkage assembly to the wiper motor using a 6mm Nyloc nut. Ensure the wiper crank arm and the linkage arm is in a straight line. Torque nut to 8Nm.



Components in this assembly		Qty	Part Number
i	Capscrew M5 x 10	6	B5358050AA
ii	Washer 6mm flat	4	B5358045AA
iii	Capscrew M5 x 16	4	B5358049AA
iv	Nut M6 Nylock	4	B5358078AA
v	Washer 6mm x 32 fender	4	B5358079AA
vi	Nut M5 Nylock	4	B5358089AA
vii	Washer 5mm x 10 flat	4	B5358094AA
viii	Capscrew M6 x 15 Domehead	4	B5358247AA
ix	Windscreen mntg bracket RH	1	M3101057AB
x	Windscreen mntg bracket LH	1	M3101058AB
xi	Hinge bottom section	4	M3101059AA

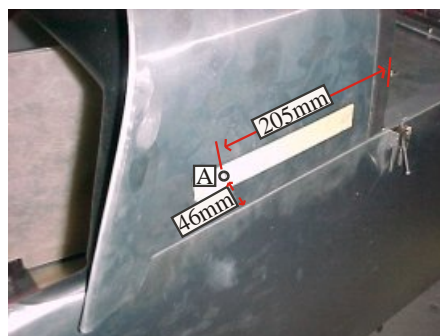
### Windscreen mounting brackets fitting procedure



**Procedure can only be completed if the scuttle is fitted to the vehicle.**

1. Stick a strip of masking tape on the right hand side of the scuttle and mark off Point A with the dimensions as illustrated below.

2. Ensure that the chassis is level then, using a spirit level, draw a horizontal line on the masking tape through Point A towards the front of the scuttle.

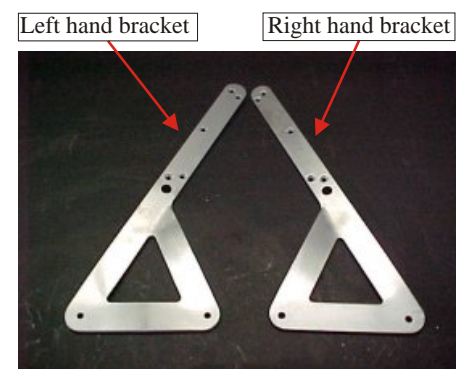
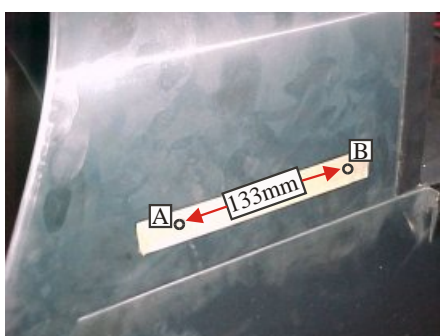


3. Mark Point B with dimensions illustrated below.

4. Repeat steps 1 - 3 on the left hand side.

6. Refer to the illustration below to identify left hand and right hand mounting brackets.

5. Drill 6mm holes at Points A and B on the right hand side and left hand side of the scuttle.

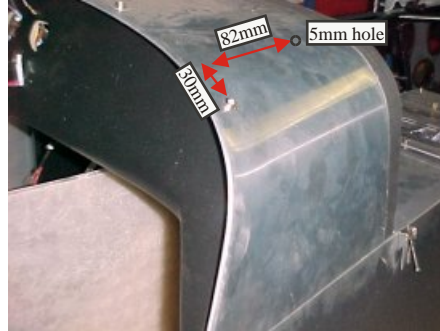




## Windscreen mounting brackets fitting procedure continue

7. Using the upholstery stud as a guide, mark off dimensions illustrated and drill 5mm holes on the left and right hand side of the scuttle.

Upholstery studs



8. Using two M6x15 capscrews, two 6mmx32 washers and two M6 Nyloc nuts, mount the right hand side bracket to the right hand side of the scuttle.

Right hand side



**Do Not tighten capscrews at this stage.**

9. Repeat step 8 on the left hand side of the vehicle.

Left hand side



Nuts and washers securing the brackets to the inside of the scuttle



10. Using two M5x16 c/sunk capscrews, two 5mm washers and two 5mm Nyloc nuts, fit the hinges to the windscreen mounting brackets on the left and right hand side.

hinges



11. Use a straight edge to ensure that the hinges are mounted parallel to the edge of the windscreen mounting bracket. Torque nuts to 5Nm.

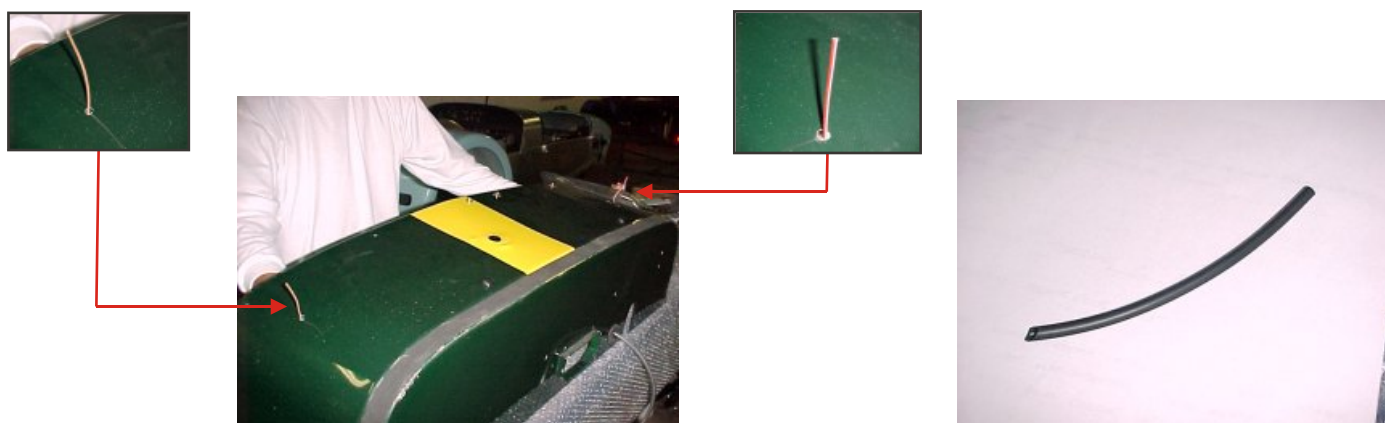


## 7:4 WINDSCREEN ASSEMBLY - K3601148AA

Components in this assembly		Qty	Part Number
i	Sleeving 4mm PVC	0.3m	B5451315AA
ii	Terminal female 6.3	2	B5451403AA
iii	Windscreen assy heated	1	M3101076AA

### Heated windscreen assembly fitting procedure

1. Feed wiring for the windscreen through holes drilled in the scuttle during the windscreen mounting bracket fitting procedure. One wire should be a red wire with a white tracer and the other a brown wire as illustrated below.
2. Cut 4mm PVC sleeving into two equal lengths of  $\pm 150$ mm each.



3. Slide sleeving over each wire through the scuttle.
4. Strip  $\pm 4$ mm insulation of both wires and crimp female terminals to wires as illustrated in Fig 1 and Fig 2 below.

Fig 1.

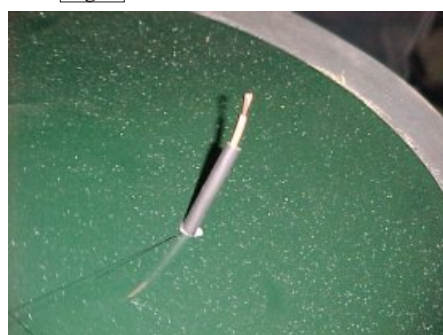


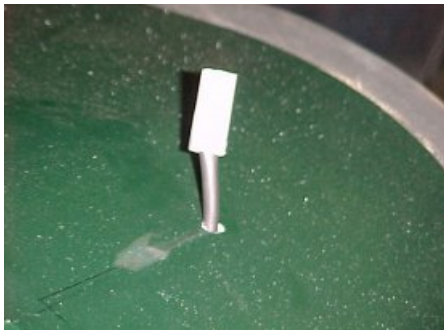
Fig 2.



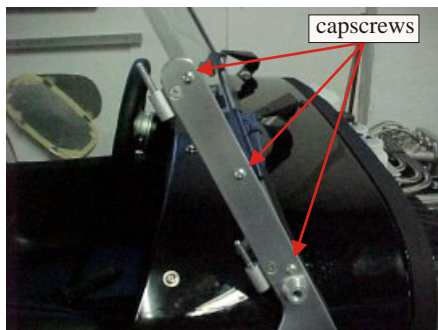
## Heated windscreen assembly fitting procedure continue

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5. Insulate terminals using 6.4mm heatshrink or PVC insulation plugs.



6. Using the 5mmx10 c/sunk cap screws (3 on each side), fit the windscreen to the mounting bracket ensuring that the upholstery studs are facing the front of the vehicle. Torque cap screws to 5Nm.



7. Connect the wires to the windscreen.



8. Tighten the windscreen mounting bracket to the scuttle. Torque 6mm nuts to 10Nm.

9. Check the heating mechanism of the windscreen by switching it on, the needle on the ampmeter gauge will move.

Nuts and washers securing the brackets to the inside of the scuttle



Components in this assembly		Qty	Part Number
i	Nut M6	2	B5358101AA
ii	Wiper assy c/w blade	2	M3101077AA

### Wiper arms fitting procedure

1. Remove the plastic cover from both wiper arms by lifting the covers and gently pulling it.
2. Place the wiper arm over the pivot and fit a M6 nut. Do Not tighten nut at this stage.
3. Positioning the wiper blade on the windscreen approximately 3mm from the lower windscreen frame.



4. Torque the 6mm nut 10Nm.
5. Replace the plastic cover over the nut as illustrated below.
6. Switch on the windscreen washer so that the water is sprayed onto the windscreen. Thereafter switch the wiper motor on and check if blades operate correctly.

