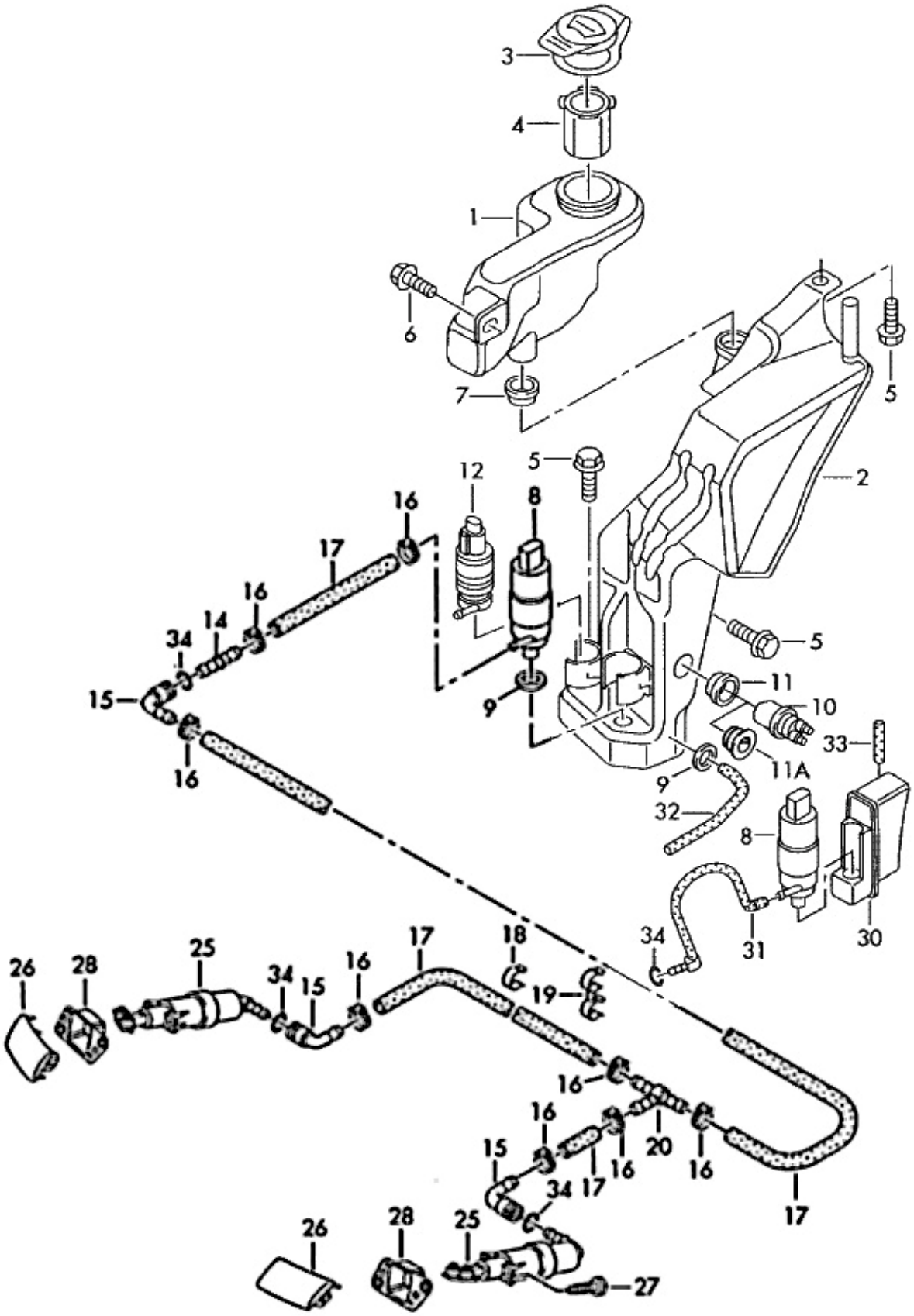
Headlight washer – Retrofit Audi A4 B6/B7

http://www.audi-sport.net/vb/a4-a4-cabriolet-s4-forum-b6-chassis/20231-retrofit-headlamp-washers.html

I have "**enhanced**" the Headlight Washer parts in the diagram below.
All the parts numbers are referenced in my previous part list post above.



Headlight washers is an expensive retrofit, but I wanted to complete the functionality of a 2nd hand S-Line bumper, I sourced, with headlight washer holes. Unfortunately it had damaged washer caps and both jet assemblies were broken off and missing.

On a factory installed system the headlight washers spray for about 2 seconds and then stop when you do a pull of the screen wash lever with the **dipped lights on**.

Retrofitted wiring I implemented as per OEM spec.....

+12v supply for headlamp washers comes via fuse S237 (i.e. Large Fuse #37 - should be 30A - mine was originally 20A - my circuit diagrams say this was changed from 25A to 30A at some time during production). This fuse supplies both Windscreen and Headlight washers.

Headlight washer signal +12v comes out of power control module, located under fuse box, Pin 6 connector T10b-Pin 2 (Black 10-pin connector - red/white wire) - I used a repair wire to add this connection. No module re-coding is required - works with Xenon option on or off. I extended the repair wire (within heat-shrink tubing) under the carpet behind the pedals through the centre console and to the passenger side and made a connection with a female/male spade connector at the A-pillar connection point.

The "official" wire goes to the n/s A-pillar connection panel to connector T1a (1-pin black connector) - and then through the bulkhead in the wheel arch to the pump. The ground for the pump should also be on the A-pillar ground point - brown wire.

I passed two wires, in heat shrink, through the bulkhead to the headlight washer pump. The 2nd wire being the ground which was connected to the A-pillar ground point. I sourced the pump connector and utilised a further two repair wires to make a proper connection to the pump.

Now this has worked out expensive and well worth trying to salvage the "wet" parts from the scrappy, but if you have the money here we go:

From ETKA illustration 955-30

08 Headlight washer pump 1x 3B7 955 681 £38.71
- Flat Connector 1x 1J0 973 722 A £4.29
14 Connecting Part 1x 4B0 955 873 £2.77
15 Angled Connecting part 3x 1J0 955 975 C £2.77 = £8.31
16 Pipe Clip 8x N 100 980 01 £0.81 = £6.48
17 Hose (min order qty=5!) 5x 1J0 955 464 F £6.07 = £30.35
18 Terminal 2x 8A0 971 848 C £2.29 = £4.58
19 Clip 3x 447 971 848 C £0.55 = £1.65
20 T-piece 1x 113 955 975 B £1.43
25 Lift Cylinder / Jet (L) 1x 8E0 955 101 C £51.83
25 Lift Cylinder / Jet (R) 1x 8E0 955 102 C £51.83
26 Cover Cap Primed (L) 1x 8E0 955 275 D £8.24
26 Cover Cap Primed (R) 1x 8E0 955 276 D £8.24
27 Screws 4x 8H0 807 199 A £0.49 = £1.96
28 Guide Frame (L) 1x 8E0 807 787 £1.52
28 Guide Frame (R) 1x 8E0 807 788 £1.52

Repair Wire 2x 000 979 133
Total = £223.71 + VAT

1. Connect to Washer pump 0v & 12v wires (1 repair wire cut into two parts is sufficient to make a connection in the housing). The repair wire obtained from Audi has the correct metal connector that inserts into the Headlight Washer pump connector shell - this gives the best electrical connection to the pump. You have to extend this as repair wires are usually only 600mm long. (I think the repair wire for this connector housing is Part No 000 979 133 {2.8mm2 size wire})

2. Extend both wires in heat shrink for extra protection from the elements.

3. INSIDE: Remove the large plastic cover under your steering wheel and above your pedals. This will give you access to all the wiring under the dashboard. Also remove the left kick side panel (This is known as the A-Pillar. FYI: Where seat belts are mounted behind the front seats this is known as the B-Pillar.)

4. OUTSIDE: Remove the road wheel directly next to the Washer Bottle and then remove wheel arch plastic liner. Looking in the wheel arch you should see the washer bottle to the left or near the front of the car. As with all other wires in this area run them at the top of the wheel arch and then down the right to where the wires go into the cabin through a large rubber grommet seal. You can make a tiny hole in a spare rubber nipple of the grommet.

5. INSIDE: Wires should now be accessible in the cabin.

6. INSIDE: The Washer Motor "0v" wire needs to pick up a chassis connection to ground it. There is a ground point with various brown wires connected at one central point in the A-pillar area.
6. In the cabin, the Washer Motor "+12v" wire needs to pick up Pin 6 connector T10b-Pin 2 of the "Power Control Module" (Black 10-pin connector - red/white wire) - I used a repair wire to add this connection. (I think this Repair Wire is Part No. 000 979 133 {2.8mm2 wire}). The Power Control Module is a flat black box to the left and below your steering wheel under a number of relays.

Connecting the headlight washer pump to the control module as described ensures you get a ~2 second headlight wash only when the headlights are on.
Further information for all, had a PM asking about connection to Power Module.....

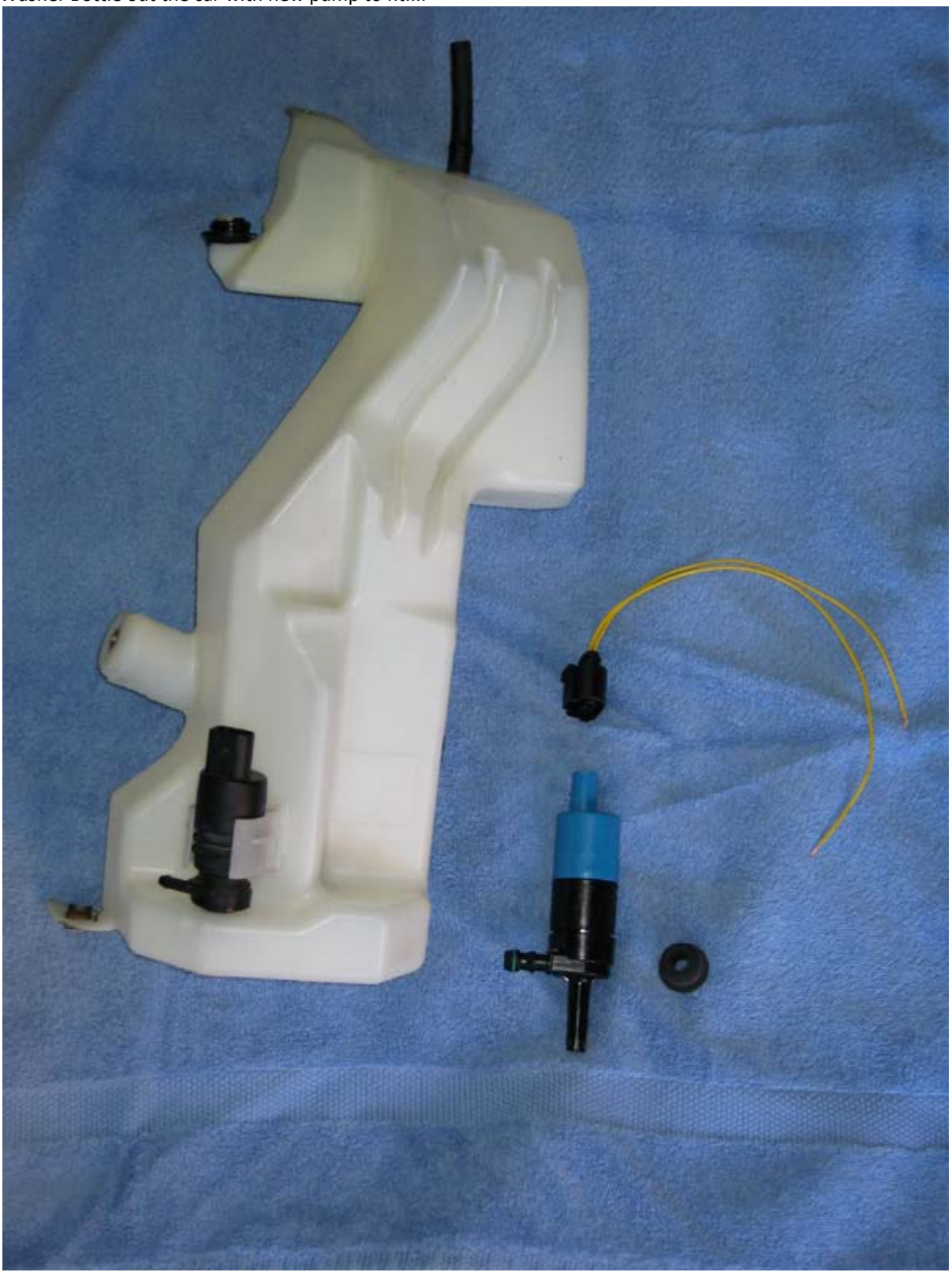
The Pin 2 wire on connector T10b will not be there - that is why you need a repair wire to put into the "free" space. Normally you will have to remove a pin retaining strip and then push in the connector and then refit the retaining strip to secure the wire.

Look very closely at the connector pin numbers will be marked in small digits on the relevant connector, normally Pin 1, then Pin 5. Pin 6 & Pin 10 maybe? From the circuit above and other circuits I have, the black connector T10b is should have wires as follows, some maybe missing if optional extra's like headlight washers:
Pin T10b/1 = no connection
Pin T10b/2 = red/white [1.5mm] (small connector).....Optional Headlamp washer motor
Pin T10b/3 = green/yellow [2.5mm]
Pin T10b/4 = black/white [2.5mm]
Pin T10b/5 = black/yellow [2.5mm]
Pin T10b/6 = no connection
Pin T10b/7 = brown [1.5mm] (small connector)
Pin T10b/8 = black/green [1.5mm]
Pin T10b/9 = red [1.5mm]
Pin T10b/10 = red [2.5mm]
Cable sizes in [brackets] according to circuit diagrams.

The simplest way to test the output is with a Digital Volt Meter (DVM) or simpler a 12v bulb and a couple of wires. In each case, connect one end to the chassis (0v) and the other end to the T10b Pin 2.
Now make sure your ignition and LIGHTS are fully ON - squirt the windscreen washer stalk - the bulb should light or the DVM should read ~12v for ~1.5-2,0 seconds. If this works connect the motor up and test, etc.

Safer to have water in the bottle when operating the pump but not essential as you do occasionally run out of water when on the road - stick a litre in for testing anyway!

Washer Bottle out the car with new pump to fit....



Hole centre to drill is 22mm from each flat edge on existing bottle.....

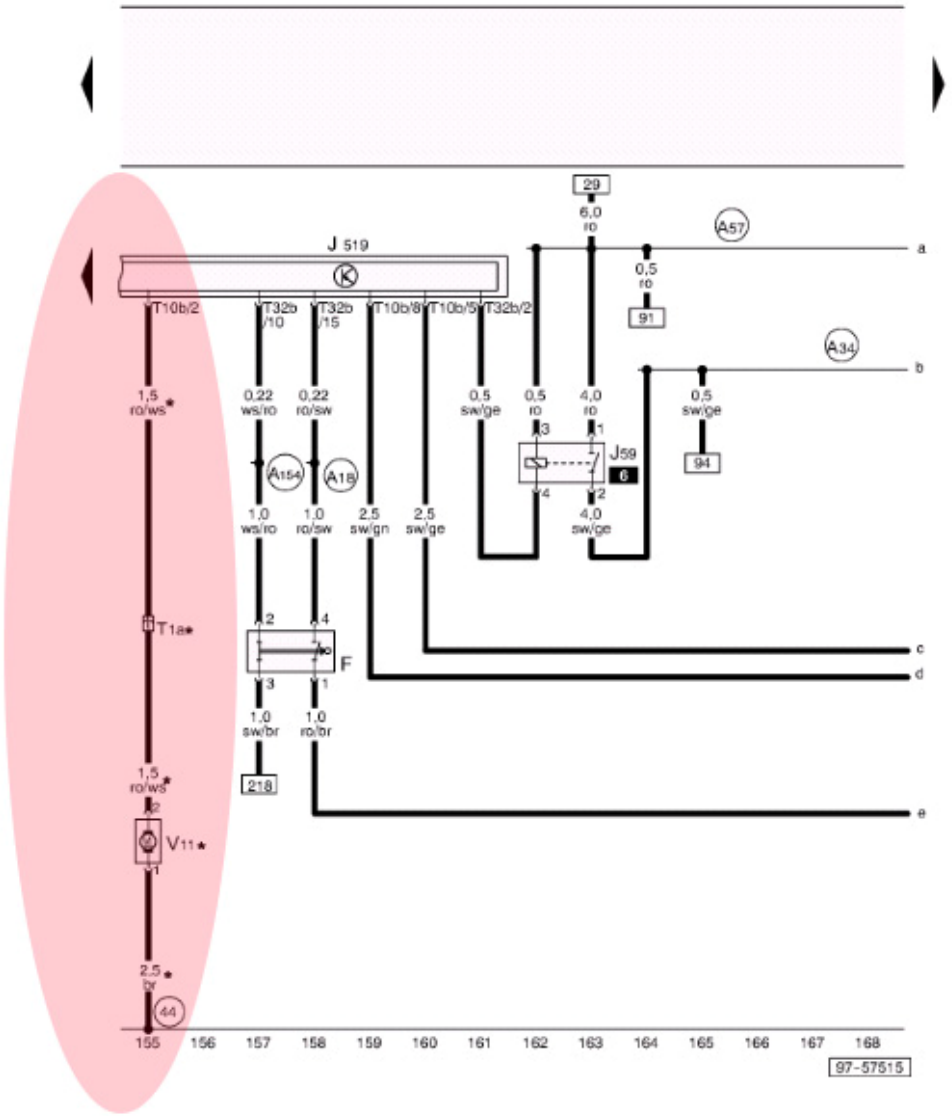
Hole drilled with a 20mm Hole cutter.....

Grommet fitted to new hole, I used self adhesive "cable tie bases" to secure the pump to the washer bottle.....

Pump fitted and secured.....

Back in the car behind n/s headlight.....

At the Headlight Washer Pump, there are numbers 1 and 2 marked on the mating pump connector. For correct operation of the pump, 1=0v and 2= +12v. If you get the headlight washer pump connections around the wrong way then the jets will not pop up.



rs = pink
ws = white
sw = black
ro = red
br = brown
gn = green
bl = blue
gr = grey
li = lilac
ge = yellow
or = orange

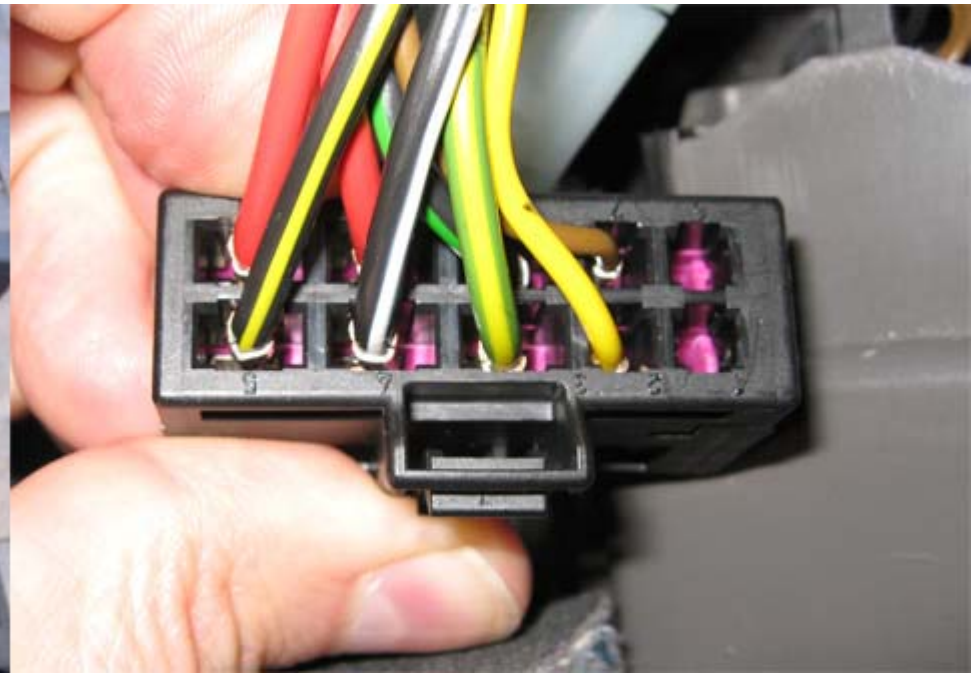
Load Reduction Relay, vehicle Electrical System Control Module, Headlight Washer Pump

F - Brake Light Switch
J59 - Load Reduction Relay
J519 - Vehicle Electrical System Control Module
T1a - 1-Pin Connector, black, connector station A-pillar, left
T10a - 10-Pin Connector, brown, connector station E-box, plenum chamber
T10b - 10-Pin Connector, black, on vehicle Electrical System Control Module
T32b - 32-Pin Connector, grey, on vehicle Electrical System Control Module
V11 - Headlight Washer Pump

(44) - Ground connection (lower left A-pillar)
(A18) - wire connection (54), in instrument panel wiring harness
(A34) - Wire connection (75x), in instrument panel wiring harness
(A57) - Plus connection -2- (30), in instrument panel wiring harness
(A154) - Brake Pedal Switch Connection (in instrument panel wiring harness)

* - Washer pump protected by Fuse S237

Pins 5/4/3/2/1 are clearly marked on the cable side of the plug shell and then it runs down the connector strip and then below we have Pins 10/9/8/7/6.
So Pins 1 and 6 are blank in this instance.
Pins 2 & 7 are the smaller connectors which is one of the Headlight washer connectors (T10b/2).
Pins 10/9/8 & 5/4/3 are the larger connectors.



Wires according to circuit diagrams:
Pin T10b/1 = no connection
Pin T10b/2 = red/white OEM [1.5mm] (small connector).....Optional Headlamp washer motor (Yellow repair wire when retro-fitted.)
Pin T10b/3 = green/yellow [2.5mm]
Pin T10b/4 = black/white [2.5mm]
Pin T10b/5 = black/yellow [2.5mm]
Pin T10b/6 = no connection
Pin T10b/7 = brown [1.5mm] (small connector)
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