

CAE PERFORMANCE PRODUCTS

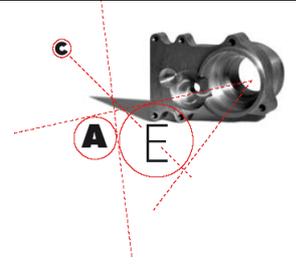
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WM-HOLDEN-FX-FJ-C/D

FX – FJ Holden Cable Wiper Kit

Customer Instructions.

Components

Wiper Motor with Flex Drive Cable 125 deg. x 900mm cable

Wiper Mounting Bracket, U-Clamp and Rubber

Bundy tubing cut to approx lengths

Two Wheel boxes, Chrome Bezels

Wiring Loom, Fuse and Switch.

Customer Instructions

Note:

The flared tubing, is cut to approximate length and flared at both end by using a standard 5/16 flaring tool. Do not Kink or dent this tubing or serious damage will occur to the Wiper Motor. **Kinked or Dented tubing must be replaced.** Some gentle bending can be achieved but you must have the flex cable inside while bending

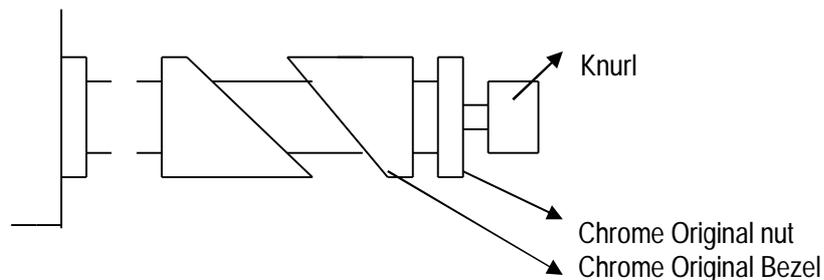
It helps the fitment of the flex into the tubing by running a 1/4" drill down the inside of the tube at each end to remove any imperfections caused by the flaring operation.

1) Remove old Wiper Assembly and Posts.

2) New Post Installation.

When fitting the posts, the LHS is to be mounted with the cable and tubing running on the bottom side of the wheel box (looking from the front seats) and the RHS to have the cable and tubing running on the top side of the wheel box, this is to give the correct parking position for the wiper blades.

New Post



Note: you can use the original painted bezels and nuts, or the chrome ones supplied. Refer to 3) for more information.

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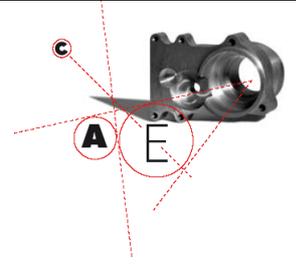
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- 3) Per-Fit the wheel box including the Plastic Spacer, Aluminium Spacer, Chrome Bezel and Nut and tighten. Check if the tube clamp part of the wheel boxes are clear of the cowl or any part of the body. If not clear it will cause excessive noise when wipers are running.
- 4) Mount the Wiper Motor through its rubber clamp onto the mounting bracket loosely and the mark out and drill the LH Door Pillar reinforcing to suit the motor mounting and the first cable tube. Use two tech screws to fasten the bracket to the LH Door pillar. The motor should be mounted as high as possible beside the glove box and have a fairly straight line to the first wheel box. The connecting tube is bent to help fitting to the LH wheel box.
- 5) When you are happy with the motor mounting, thread the flex cable through the short tube in to the LHS wheel box, then through the centre interconnecting tube, then into the RHS Wheel box and then into the end piece of tubing which only needs to be short enough to cover the excess flex cable. This flex can be cut if it is too long, use an angle grinder with a cut off wheel for best results. The interconnecting tube between the two wheel boxes can be slightly bent to allow the cable to move down to the bottom of the RHS wheel box, but care must be taken not to dent or kink the tubing.
- 7) Approx lengths of the 5/16" Tubing supplied, is as follows
Motor to first wheel box --- Approx 45 – 60 mm depending on where you mount the wiper motor.
LHS Wheel box to RHS Wheel box Interconnecting Tube. Approx 670mm depending on the curve you put on the tube and cable. RHS Wheel box end piece is 120mm but can be shorter if you trim the excess flex cable.
- 8) Connect the 6Pin Loom connector to the wiper motor. Connect the Brown wire to a suitable earth on the body of the vehicle. Connect the Red Wire through the fuse supplied to a suitable Ignition +ve feed circuit on the vehicle. Mount the rotary switch and activate the wipers. **DO NOT FASTEN THE ARMS AND BLADES UNTIL YOU WATCH THE ROTATION OF THE KNURL SHAFT TO ESTABLISH WHERE THE PARKING POSITION IS FOUND.** Fit the Arms and Blades, rotate and check the self parking position and adjust the blade angles and the position of the arm on the knurl driver if necessary. Both Blades park in the bottom of the screen facing each other.

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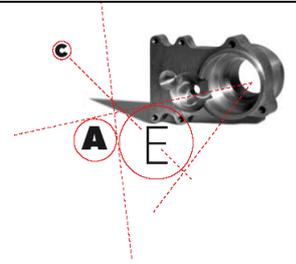
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Windscreen Wiper Systems ----- Some useful helps.

1. Motor

This is a two speed wiper motor, with self parking.

Make sure you use the correct bracket and strap with the rubber covering, and the motor is not touching any part of the vehicle body to eliminate noise.

2. Drive Gear

When the new motor arrives there is a threaded brass ferrule to take the first drive tube. There are a couple of gears to fit this motor with the number 100 or 130 which is stamped on the top round plate. This is giving the least amount of travel to the rack and wiper arms.

On the top of the gear plate where the number is stamped there is a drive peg welded in position. This is the only item which changes position throughout all the gears (e.g. welded in different positions on the top plate.).

Obviously if this peg was welded to the centre of the plate there would be no travel at all, so the further the peg is positioned to the outer edge of the plate the more travel you get. With each gear come 2 washers and a circlip retains the gear in to the motor, always pack with grease in the gear area before refitting the top cover.

CAE Performance Products can offer different degree of sweep gearwheel should that be required.

3. Wheel Boxes

The wheel box size is 32 teeth on the inner drive wheel and the ideal length of shaft from the inner face to the end of the splines is 2.5 inches. This allows for the thickness of material on fibreglass cars as the first spacer can be cut down in size allowing for varying thicknesses through the bulkhead where the wheel boxes fit.

If the car has a split screen then it is quite easy to fit what was called the clapped hands system. This is by turning one of the wheel boxes through 180 degrees. If the parking position of the blades is vertical instead of lying flat, then the drive gear inside the wiper motor requires the drive plate and its link pin to be pushed away from the nylon gear and rotate this nylon gear 180 degree so its park switch is now in the correct position. Reassemble and test. C. A. Enterprises can do this for you for \$20.00. + postage.

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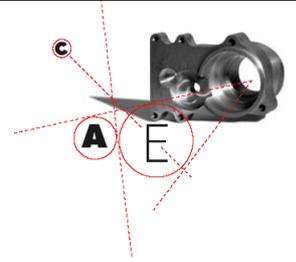
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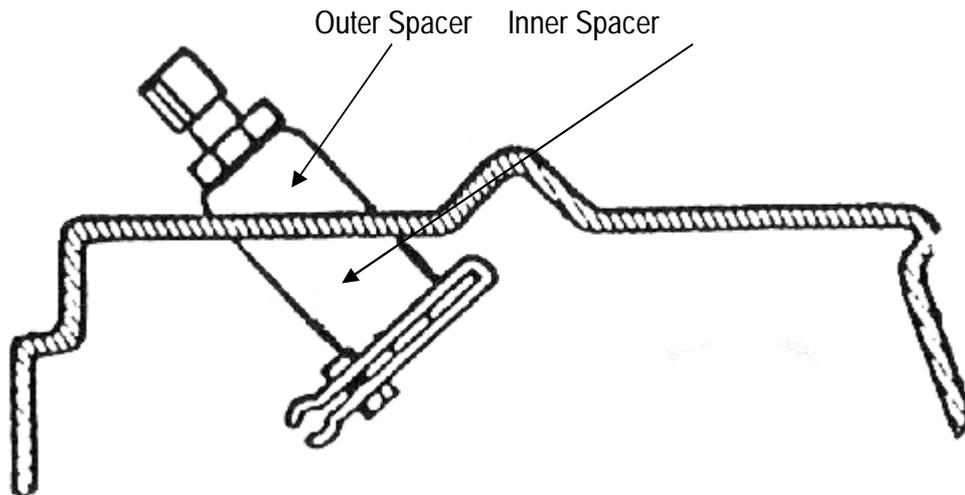
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Wheelbox showing inner and outer spacer which will require some radius work to suit individual shaped cowls



Reference Drawing

4. Drive Rack

When fitting a new system to an existing vehicle, it is advisable to fit a new drive rack as this is one of the items that wears, resulting in the wiper arms having too much play or over slap.

5. Drive or "Bundy" Tubing Sets

It is far better to use the recommended wiper tubing (5/16 Steel Brake Tube) than to use copper tube as this can be noisy and wears very quickly on any bends. Wear of the drive tube, sharp bends or kinks in the tube, causes friction that can lead to the motor burning out.

Bundy tube sets can be made up providing you give the supplier 2 dimensions. The first is the distance from the motor to the centre of the first wheel box hole, and the second the distance between the wheel box hole centres through the bulkhead. Obviously if there is a 3 wiper system then there is another dimension needed. Try to avoid sharp bends in the tubing, if you have to bend the bundy tube, an easy way to form the shape is to insert the drive rack into the tube before bending. This will keep the tube the correct diameter on any of the bends (very much like a plumber bends copper piping by inserting the spring). Always grease the rack liberally before inserting into the bundy tube.

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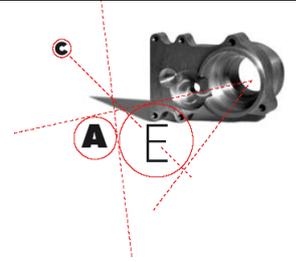
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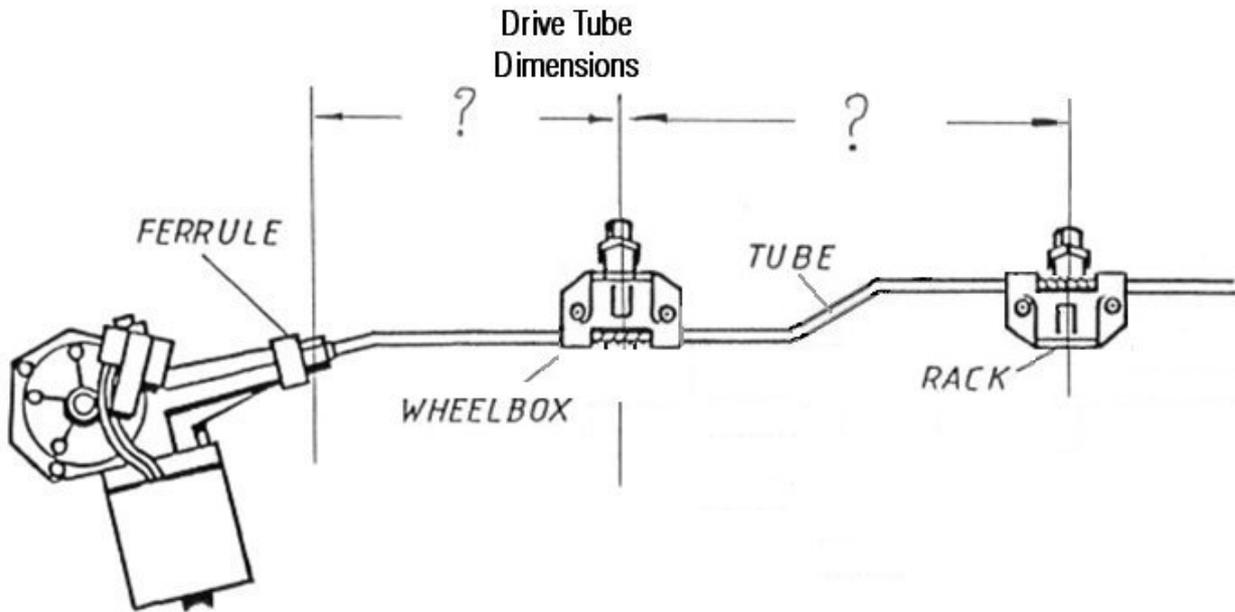
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Drive Tube Dimensions Drawing (Reference Only)



Note for centre parking blades, i.e. like FX/FJ Holden's, the LHS wheelbox is reversed and its drive cable and Tube runs under the bottom of the wheelbox and the centre tube is bent in a slight s bend to bring it back up to the top the RH Wheelbox.

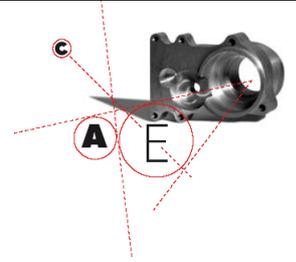
6. Switch

It is important that you use the correct wiper 2-speed switch as supplied. The reason for this is that when the switch is in the off position with the ignition switched on there is one connection which becomes live. This operates the parking position. If you use a non-live switch then the wipers would stop whenever the switch was switched off.

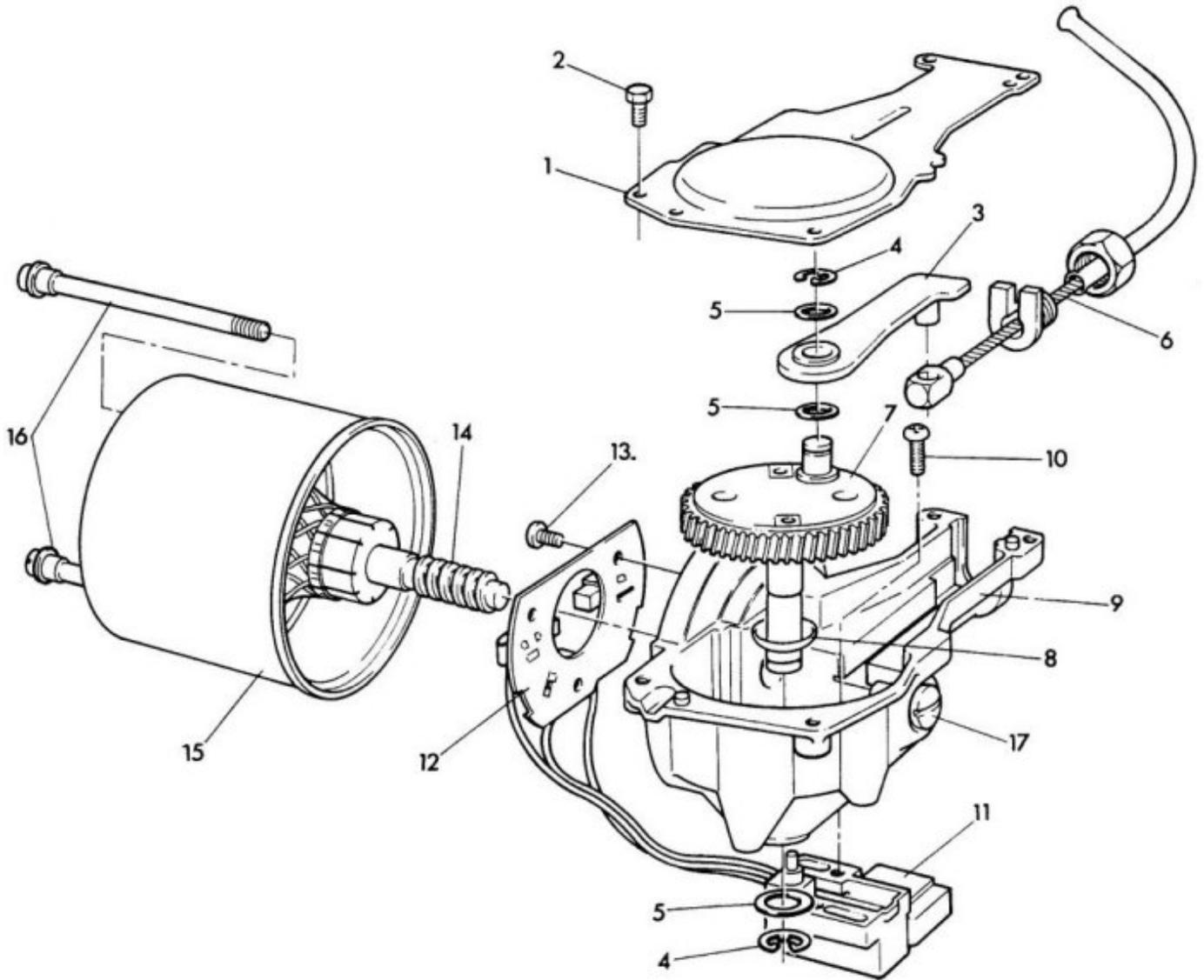
If purchasing a second hand motor make sure there are 3 wires going into the motor body. This is the way to tell if the motor is 2-speed, 1 speed only has 2 wires.

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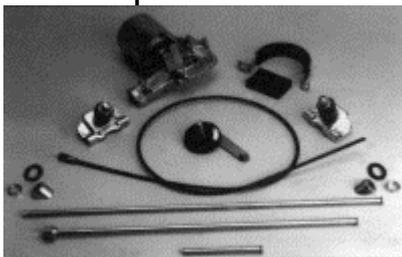
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- KEY:**
- | | | |
|------------------------|----------------------------|----------------------|
| 1 Gearbox cover | 7 Gear wheel with crankpin | 13 Screw for brushes |
| 2 Screw for cover | 8 Dished washer | 14 Armature |
| 3 Connecting Rod | 9 Gearbox | 15 Yoke |
| 4 Circlip | 10 Limit switch screw | 16 Bolts |
| 5 Washers | 11 Limit switch | 17 Thrust screw |
| 6 Flexible wiper drive | 12 Brush gear | |



WIPER KITS
 Made to your requirements

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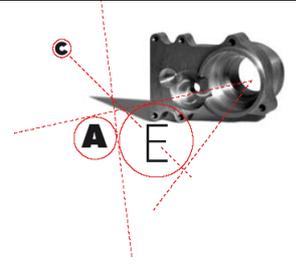
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WASHER KIT ASSEMBLY 1.2 LITRES

Bottle & pump assembly,
mounting bracket,
push button switch,
tube & a twin Jet.



WINDSCREEN WASH PUMP

Wiper Arms Part Number TC203 x 2.

Wiper Blades Part Number TE103-12" x 2.

Drive Tube (correct material) Cut & flared.

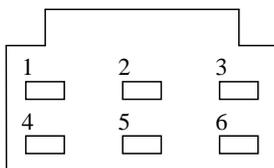
No Charge

Wheelboxes

32 tooth gear wheel.3 1/4 inch drive shaft.

Wiper Motor Pin Outs.

Plugs viewed from the front not the wiring side



- 1) Black (Earth)
- 2) Green/Red (Low)
- 3) Blue/Red (Park)
- 4) Blank
- 5) Yellow/Blue (High)
- 6) Green/White (+ve)

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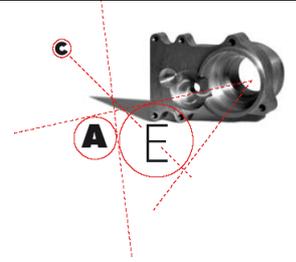
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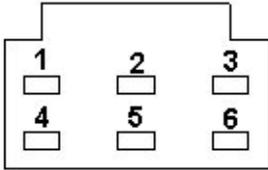
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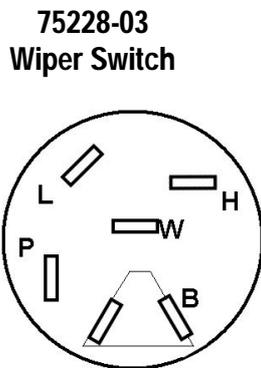
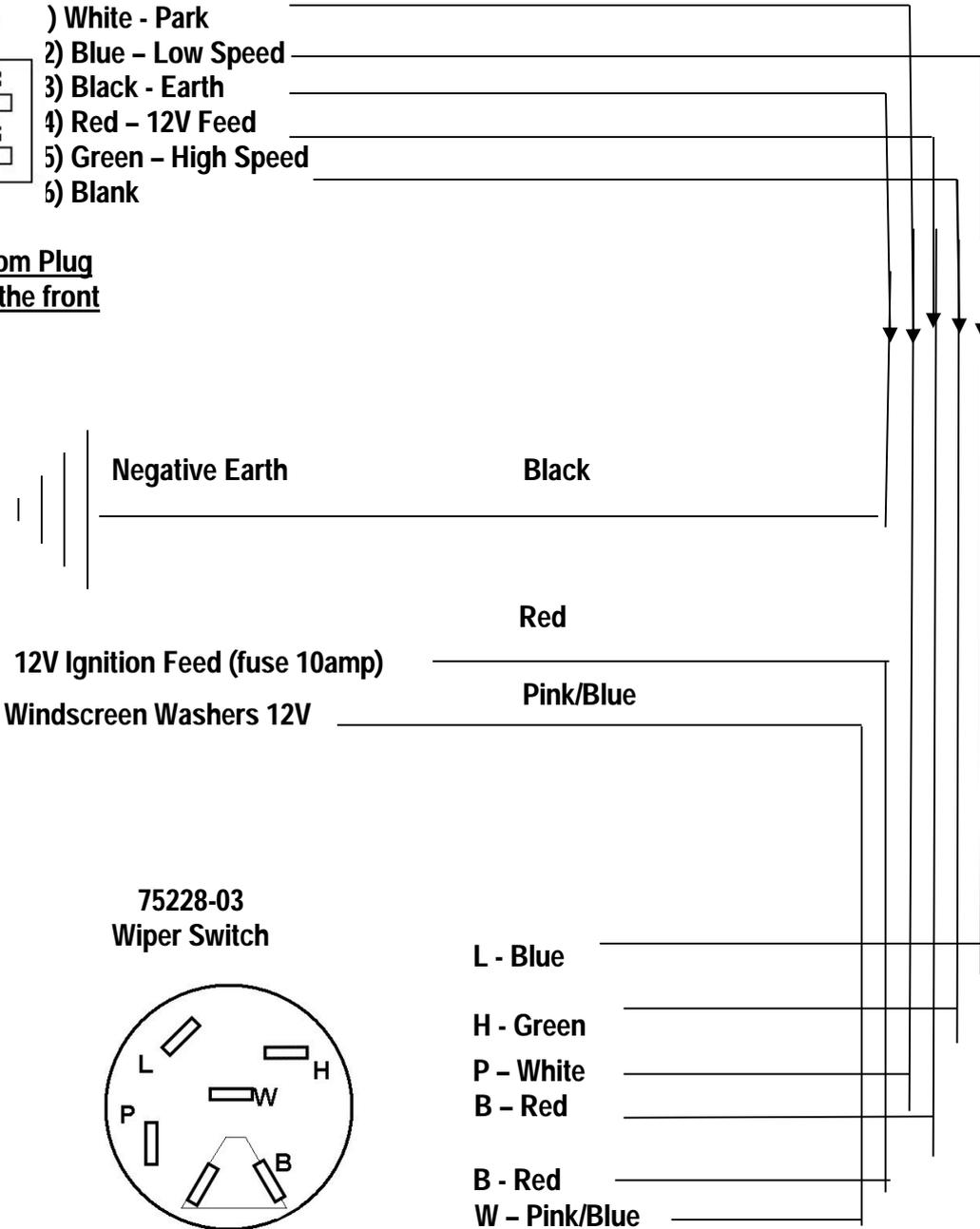
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WIPER MOTOR LOOM PINOUTS



- 1) White - Park
- 2) Blue - Low Speed
- 3) Black - Earth
- 4) Red - 12V Feed
- 5) Green - High Speed
- 6) Blank

6 Pin Female Loom Plug
As Viewed from the front



Wiper switch system is 12V Positive Feed