



## Windshield Wiper Kit – FFR 818

P/N 80037

Thank you for purchasing FormaCars' Windshield Wiper Kit. This kit provides a drop-in windshield wiper solution specifically designed for the Factory Five Racing 818.



## 1. Inventory Items

The following items are in the box. If anything is missing, please contact us before you begin.

#	P/N	DESCRIPTION	QTY
NS	30584	22" WIPER BLADE FF 818	1
NS	30581	WIPER ARM FF 818	1
NS	30554	#17 HIGH SPEED STEEL DRILL BIT	1
9	30580	WIPER MOTOR, ONGARO 33621 FF 818	1
8	30586	0.203" ID x 0.438 OD FLAT WASHER	2
7	30585	#10-24 x 2.50" LG. PHILLIPS PAN HEAD SCREW	1
6	30002	#10-24 NYLOCK NUT	1
5	80046	SUPPORT, HOOD FF 818	1
4	80044	SPACER, 0.625", WIPER FF 818	1
3	80043	SPACER, 0.375", WIPER FF 818	1
2	80042	MOUNT, WIPER MOTOR FF 818	1
1	30553	10-32 X 1" SLOTTED HEX FLANGE HD. THREAD CUTTING SCREW	5

You'll also need the following.

- Ratchet, 7/16" socket
- Power drill
- Rivets or screws to mount hood support
- Wiring tools

## 2. Drill holes in frame

Begin by placing the wiper mount onto the chassis. It mounts at the base of the windshield on the driver's side with the front edge on the horizontal tube between the upper control arms. Depending on how your windshield surround is mounted, you may need to trim the edge of the surround and the wiper mount may need to slide under the windshield surround flange.

Once positioned, using the mount as a guide, mark the locations of the mounting holes.

Remove the mount and drill the holes using the included drill bit.

## 3. Install the Hood Support

If you have already installed the Factory Five Racing hood support, remove it.

Position the new hood support so that the driver's side edge is 10" from the center of the driver's side hood pin and the base is at the bottom of the windshield surround.

Mark it and drill it and the windshield surround for the type of fasteners you plan on using (we recommend using 6 fasteners). As you locate your fasteners, keep in mind that there will be limited fastener access behind the wiper mount. Once installed, add bulb seal from your kit to the two top edges of the support.



#### 4. Assemble Kit

The kit comes with two spacers, one 3/8" and one 5/8". You will need to use at least one of them to get the wiper arm down close to the glass. Start with the 5/8" spacer and assemble the motor and spacer into the mount using the nut on the motor shaft and the #10-32 x 2 1/2" screw at the end of the motor.

Using the included self-drilling screws, bolt the mount to the chassis and assemble the arm and blade to the mount. The swing of the motor is adjustable, but we have preset it for the 818. The blade parks at the base of the windshield on the passenger side, install the arm with the blade about 8" from the bottom of the glass. You will need to adjust the angle of the blade at the end of the arm and may need to bend the arm slightly so that the blade rests properly on the glass.

Once assembled, check the clearance to the glass. You want about the bottom of the arm to be less than 5/8" from the glass at the base of the windshield. If necessary, add or replace spacers.

#### 5. Wiring

Disconnect your vehicle's battery before proceeding. Use the electrical connector of your choice to attach the wiper motor wires to your vehicle's wiring. All terminations should be sealed with heat-shrink tubing or electrical tape, and secured from vibration.

Below are the typical wire colors on the wiper motor.

Wire Color	Function
Solid White – Ground	Ground
White/Blue	High Speed +
White/Green	Low Speed +
White/Red	Park +

NOTE: If your wiper motor has heat-shrink labels on the wires, refer to those instead of the above table. Every motor is tested for full functionality before packaging, on rare occasions we find a motor that has inconsistent wire colors. These motors still function the same, we just add the correct wire function labels.



## OEM Subaru Wiring

Locate your OEM wiper motor connector and identify the following wires. The colors change slightly through model years 2002-2007, but they function the same. Match the functions accordingly, and ensure a secure electrical connection at each termination. For the unused wire (Pin 5), seal the end of it with electrical tape or heat shrink to prevent a short.

Pin number	Wire Color	Function
1	Black/Blue	Low Speed +
2	Black	Ground
3	Yellow/Black	Park +
4	Red or Red/Blue	High Speed +
5	Green/Yellow or Green/White	Unused

## 6. Check fit and operation

Once wired, turn on the ignition and check the wiper operation using the slow speed setting. The swing of the arm shouldn't get any closer to the hood support than about 1/2" and the tip of the shouldn't leave the glass. Adjust the arm on the spline as needed and the angle of the blade to achieve that. You should not have to adjust the sweep of the motor, but instructions are included if you want a different sweep angle.

Next install the hood and check clearance to the hood flange. Although we've designed the kit to avoid cutting the hood, because each build is slightly different it is possible that you will have to trim the hood return flange slightly to clear the wiper arm.

Once completely adjusted, re-check all fasteners.

## 7. Enjoy!



## Adjusting the wiper motor

1. Start by removing the wiper motor from the ABS mount
2. Using a 3mm hex/Allen wrench, remove the four bolts holding the back cover on the motor's gearbox. Remove the cover carefully as to not damage the rubber seal
3. Using needle-nose pliers, remove the E-clip that runs between the arm and gear.
4. Refer to the table below to determine which position the gear needs to be in.
5. If the angle-selector wheel needs to be moved, use a Phillips screwdriver to remove the two screws, rotate the wheel, and reinstall the screws.
6. Reinstall the arm and E-clip. Test the motor to ensure it's functioning as planned before reinstalling the back cover

Different Angle & Parking Configurations.  
To be adjusted when motor is stopped in parking pos.

Angle/Park	Hole	Pos.
40/R	D	1
40/L	D	2
50/R	D	2
50/L	D	2
60/R	B	2
60/L	B	1
70/R	B	1
70/L	B	2
80/R	C	2
80/L	C	1
90/R	A	2
90/L	A	1
100/R	C	1
100/L	C	2
110/R	A	1
110/L	A	2