



40 Huntingwood Drive Huntingwood NSW 2148

Phone: (02) 8825 1999 Website: [www.aeroflowperformance.com](http://www.aeroflowperformance.com)

## AEROFLOW PERFORMANCE BRAKE PROPORTIONING VALVE

### WARNING!

THIS PRODUCT REQUIRES DETAILED KNOWLEDGE OF AUTOMOTIVE SYSTEMS. WE RECOMMEND THAT THIS INSTALLATION BE CARRIED OUT BY A QUALIFIED AUTOMOTIVE TECHNICIAN.

The selection and installation of brake components should only be done by personnel experienced in the proper installation and operation of braking systems. The installer must use his/her own discretion to determine the suitability of the brake components and brake kits for every particular application.

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY BRAKE COMPONENT TO DETERMINE THE SUITABILITY OF THE COMPONENT FOR THAT PARTICULAR APPLICATION.

### INTRODUCTION

Congratulations on your purchase of Aeroflow Performance Brake proportioning valve. Aeroflow Performance products cannot and will not be responsible for any damage, or other conditions resulting from misapplication of the parts described herein. However, it is our intention to provide the best possible products for our customer, products that perform properly and satisfy your expectations. Should you have any questions? Please call technical support at +61 2 8825 1900 and have the product part number on hand when calling.

The Aeroflow brake combination proportioning valve simplifies the brake proportioning adjustments on vehicles with custom brake systems. It allows an easier mounting position right next to the brake master cylinder with the use of the bracket (AF300-149 Sold Separately) as well as less hard-line plumbing.

This combination block maintains full isolation between front and rear fluid circuits in the tandem master cylinders. The rear circuit has a single inlet and single outlet with the adjustable proportioning valve. The front circuit has a single inlet with two outlets. It can be run as a single outlet with one outlet plugged, or used to split the plumbing on its way to the front brake calipers.

Each inlet and outlet port accepts 3/16" brake lines with 3/8-24" inverted flare females. A cool feature of this unit is the built-in brake light switch. This brake light switch allows you to activate your tail lights with hydraulic pressure from your brake system. This brake light switch is also available separately (AF300-147). A fluid port with the pressure switch responds instantly to pressure in the front fluid circuit for brake light activation. Wiring terminals with a protective boot is included with the switch.

Although the combination valve may mount in some OEM locations, it is not a direct replacement for any OEM unit and may require modifications to the brake lines and/or the mounting location for installation. Bias proportioning adjustments will be specific to each vehicle.



## **INSTALLATION GUIDELINES**

### **Mounting**

If equipped, the OEM combination valve bracket may provide the ideal mounting location for this new combination valve. Otherwise, position this proportioning valve in a convenient location that is as close to the master cylinder using customer supplied hardware or a fabricated bracket.

### **Brake Line Connections**

The brake line connections on this proportioning valve are 3/8"-24 with an SAE inverted flare for standard 3/16" brake line. Ensure to always use correct tube spanners when tighten and loosen these tube nuts.

The brake line from the master cylinder for the return of the front brakes connects to the port marked "FI", (front in), on the top of the proportioning valve.

The two ports on the bottom of the proportioning valve marked "FO", (front out), will be the supply lines to the front brake calipers. These ports can be used to run individual lines to each caliper. Or if preferred, one port can be blocked, and a single line run from either "FO" port to a tee piece plumbed downstream, splitting the lines to feed each front caliper. The function of the valve will not change.

The brake line from the master cylinder for the return of the rear brakes connects to the port marked "RI", (rear in), on the top of the proportioning valve.

The single port marked "RO", (rear out), connects to the line going to the back of the car to feed the rear brake calipers.

### **Brake Switch Connections**

If your vehicle is already equipped with a brake light switch on the brake pedal, the brake switch included on the proportioning valve does not need to be used, and it may be removed. Plug the unused port with a 1/8" NPT pipe plug (not included). For all other applications, or if you wish to eliminate the switch on the brake pedal, use the switch in the proportioning valve provided.

A rubber dust boot is included with the brake switch and proportioning valve. It may require some cutting to fit the wire through. Ensure to feed the wire through the rubber dust boot before it is terminated.

Two wires and spade terminals not included with the proportioning valve. Coat both wires with Dielectric Grease to ease sliding the wires through the holes in the rubber dust boot. Push the spade terminals onto the brake switch terminals and slide the dust boot over the switch.

Connect one wire of the brake switch to a 12-volt, 15-amp fused circuit. This should be a battery direct, always hot circuit. Do not use an ignition key switch activated circuit.

Connect the other wire to the lead wire going to the brake lights.

It will not matter which terminal you use for each wire or terminal on the brake light switch.

Be sure the brake lights are properly grounded, and all connections are secure and insulated.

### **BLEEDING BRAKE LINES ON CAR**

1. Remove the master cylinder cover and check the fluid level. Be sure to check the fluid level often during the bleeding process. And add fluid as necessary to prevent air from entering the master cylinder. If this happens you MUST start over at bench bleeding the master cylinder.
2. Replace the master cylinder cap.
3. You will need an assistant to pump the brake pedal while you open and close the bleeder screws at the appropriate times during this process.
4. The wheel farthest away from the master cylinder is bled first which in most cases is in this order: Right rear, left rear, right front and left front. Failure to bleed in the proper order will cause air to remain in the lines.
5. Crack the bleeder screws at the appropriate wheel just enough to make it easy to loosen later. Attach a length of clear plastic tube to the end of the bleeder screw. Submerge the other end of the tube into a container filled with brake fluid.
6. Crack the bleeder screw open just enough to allow fluid to leave the valve and have an assistant slowly and firmly apply pressure to the pedal. Have the assistant hold pressure on the pedal until you see no more air bubbles coming out of the hose. Close the bleeder screw and have the assistant release the brake pedal. Repeat this step until no more air is seen leaving the tube.
7. Proceed to the next wheel in the bleeding order and repeat steps 5 & 6 for each. Be sure to check the fluid level in the master cylinder frequently.
8. Refill the master cylinder to the appropriate level when finished with the entire bleeding process.
9. Check the pedal, it should feel solid when depressed with no sponginess and should hold under constant pressure without dropping. If you still have a spongy pedal, repeat the entire process.
10. Before operating the vehicle test the brakes under controlled conditions. Make several stops in a safe area from low speeds gradually working up to operating speeds.

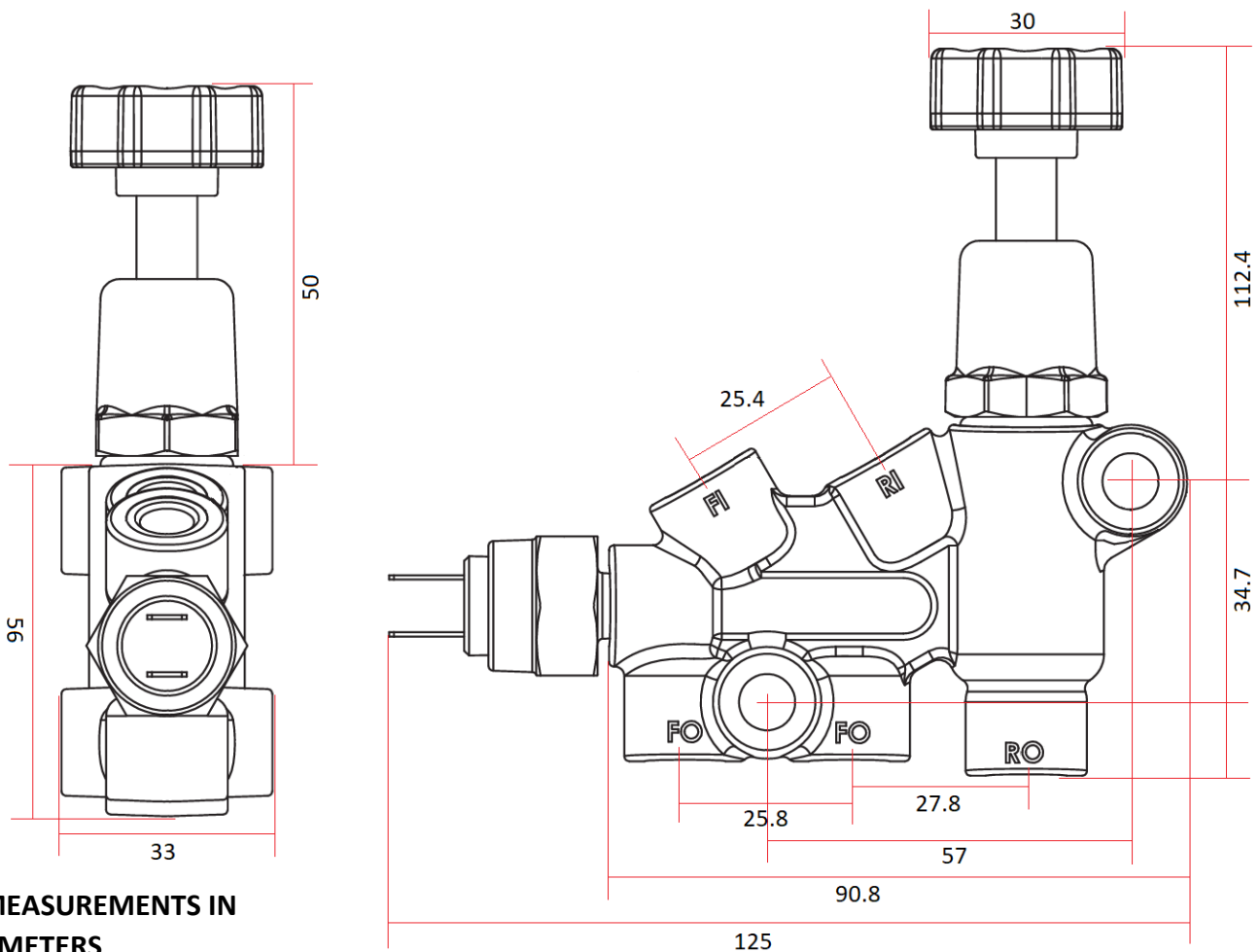
## **BRAKE TESTING**

- Make sure pedal is firm: Hold firm pressure on pedal for several minutes, it should remain in position without sinking. If pedal sinks toward floor, check system for fluid leaks. DO NOT drive vehicle if pedal does not stay firm or can be pushed to the floor with normal pressure.
- At very low speed apply brakes hard several times while turning steering from full left to full right, repeat several times. Remove the wheels and check that components are not touching, rubbing, or leaking.
- Carefully examine all brake components, brake lines, and fittings for leaks and interference.
- Make sure there is no interference with wheels or suspension components.
- Drive vehicle at low speed making moderate and hard stops. Brakes should feel normal and positive. Again, check for leaks and interference.
- Always test vehicle in a safe place where there is no danger to (or from) other people or vehicles.
- Always wear seat belts and make use of all safety equipment.

## **Proportioning Valve Adjustment**

The proportioning valve is used to adjust the rate of increase in rear brake line pressure, relative and proportionate to the increase in front brake line pressure. For safety and performance, the rear brakes should never lock before the front brakes.

1. Begin with the valve in the full proportioned (least pressure) position by turning the knob all the way out (counter-clockwise rotation).
2. In a safe location, make several hard stops from 50 kph observing the function of the rear brakes. If the rear brakes do not lock up before the front, gradually increase the rear line pressure by rotating the valve clockwise (two turns each time).
3. Continue these adjustments until the maximum amount of rear brake pressure can be achieved, and no wheel rear lock is observed.
4. Test the vehicle again at 80 kph and make any additional adjustments as needed.



**ALL MEASUREMENTS IN  
MILLIMETERS**

*For more information or technical enquires*

*Contact: Aeroflow Performance on*

*Phone: (02) 8825 1979 Website: [www.aeroflowperformance.com](http://www.aeroflowperformance.com)*