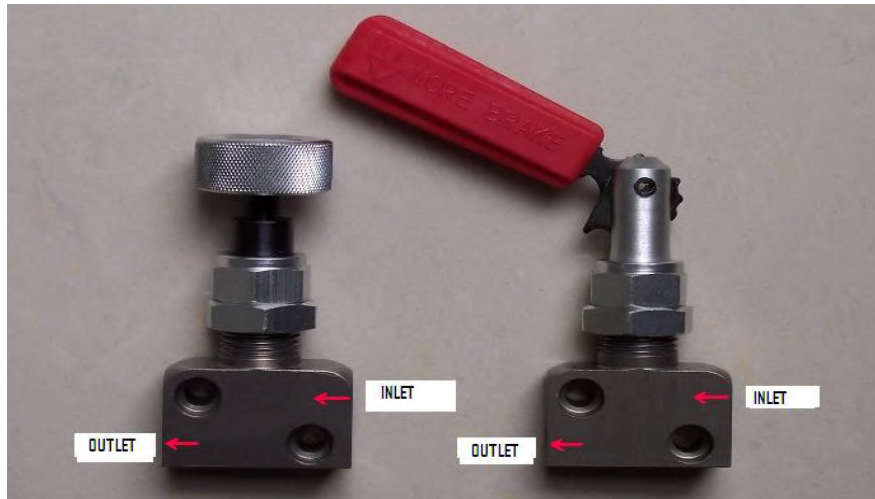




ADJUSTABLE BRAKE PROPORTIONING VALVES



WARNING

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING AND BRAKE COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THAT COMPONENT OR KIT FOR THAT PARTICULAR APPLICATION. IF YOU ARE NOT SURE HOW TO SAFELY USE THIS BRAKE COMPONENT OR KIT, YOU SHOULD NOT INSTALL OR USE IT. DO NOT ASSUME ANYTHING. IMPROPERLY INSTALLED OR MAINTAINED BRAKES ARE DANGEROUS. IF YOU ARE UNSURE, SEEK EXPERT PROFESSIONAL QUALIFIED HELP OR RETURN THIS ITEM TO US. YOU, OR THE PERSON WHO INSTALLS THIS PRODUCT, MUST KNOW HOW TO INSTALL OR PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE TO OFFER TECHNICAL ASSISTANCE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR SPECIFIC INSTALLATION. RACING EQUIPMENT AND BRAKES MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR DAMAGE, WEAR OR FATIGUE.

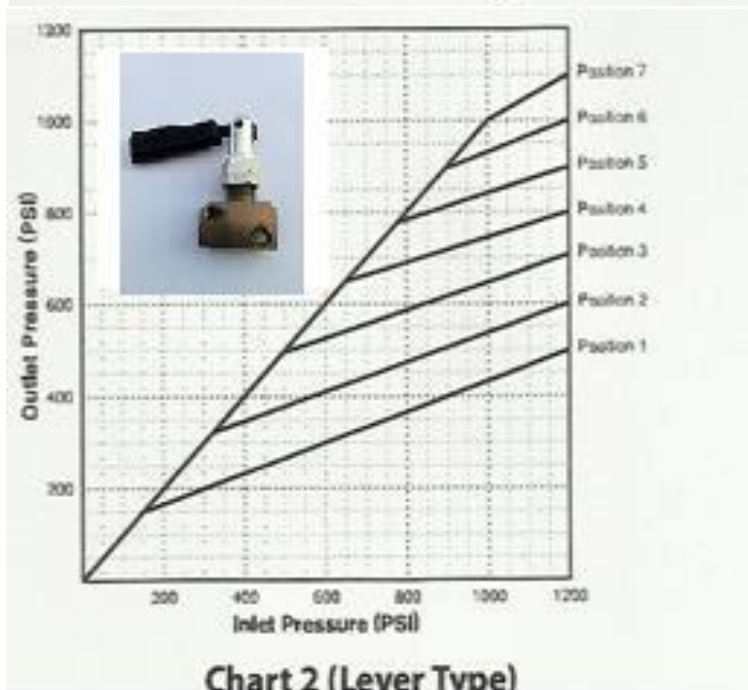
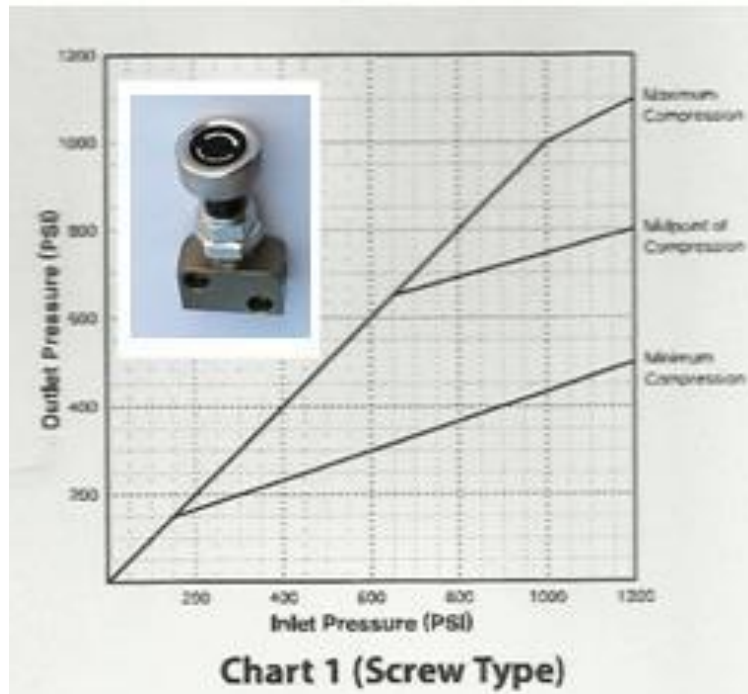
Please refer to the above pictures for identification of the inlet and outlet ports. The inlet ports are at the top right hand side and the outlet to the lower left hand side. This is with the enlarged cap screw recess hole side facing you.

If installed the wrong way around, these valves will not work.

All inlet and outlet ports have standard M10x1 mm thread.

IMPORTANT NOTE:- At higher pressures, an internal piston inside these Proportion Valves separate the fluid at the inlet and outlet sides. No fluid flows through the valve. **Therefore, you cannot bleed the system at high pressure.** Use light pedal pressure as an added precaution, move the Lever to position 7 in lever valves or rotate the adjusting knob in a clockwise direction to reduce internal pressure.

UNDERSTANDING HOW BRAKE PROPORTIONING VALVES WORK



These brake proportioning valves enable the driver or co-driver to make adjustments of the brake force reduction to a particular wheel or wheels

The proportioning valve is one of the least understood devices bolted on to a race car. They are often viewed as restrictor valves, which they are not. Understanding, from a functional viewpoint, will allow the driver to take full advantage of its properties for a better race car set up.

At low pressures (up to about 180 PSI), these Proportion valves operate as a simple hydraulic through coupling with a 1:1 inlet to outlet pressure flow rate. The 45 degree lines shown in the above charts

Indicate that once a certain pressure is reached, with a further increase in line pressure (i.e. more braking) the Proportion valve starts to operate and a further increase in line pressure results in a reduced flow rate of 60% from inlet to outlet from that point onwards.

The Adjustment knob or lever adjusts the point at which this switch over from a 1:1 flow rate to a reduced 60% flow rate occurs.

The dual slope line performance characteristic gives one advantage over the brake pedal box adjustable balance bar type proportion system as it can be fine tuned for better front to brake balance under both light and heavy braking. A particular setting of a pedal box brake bias bar gives you a fixed front-to-rear brake balance (such as 70/30 – 70% front to 30% rear). Under both light and heavy braking, the balance remains the same.

However, the loading on the front and rear axles does not remain the same under different braking conditions. During heavy braking, there is a large load transfer from the rear to the front axle. As the load increases on the front axle, you want a higher percentage of the braking force on the front axle. The bend in the above graph lines for the Proportioning valves allows this progressive braking force proportioning to happen when the valve is placed in the line for the rear callipers – during heavy braking, a higher percentage of the braking force is proportioned to the front calipers.

This contrasts with the pedal box adjustable brake bias fixed setting bar set up which cannot do this.

Problem	Solution (Knob Type)	Solution (Lever Type)
If you experience the rear wheels locking up only under heavy brake pressure.	You need to use the position of the top line on the graph to solve this. Fully wind down in direction labelled as 'More Pressure'. Winding the knob out in an anti-clockwise direction will reduce the rear brake pressure quicker. i.e. it will reduce to the 40/60 split at a lower amount of applied/inlet pressure.	You need to use Position 7 to solve this. Fully in the direction of 'more brake' which will be pointing towards the rear of the car (towards outlet side). Bringing the lever forward will reduce the rear brake pressure quicker. i.e. it will reduce to the 40/60 split at a lower amount of applied/inlet pressure.
If you experience the rear wheels locking up easily, even at low pressures.	You need to use the position of the bottom line on the graph to solve this. Fully wind out in anti-clockwise direction. Winding the knob out in an anti-clockwise direction will reduce the rear brake pressure quicker. i.e. it will reduce to the 40/60 split at a lower amount of applied/inlet pressure.	You need to use Position 1 to solve this. Move the lever in the opposite to the direction labelled as 'more brake'. The lever will now be pointing towards the front of the car. (inlet side) Bringing the lever forward has reduced the rear brake pressure quicker. i.e. it will reduce to the 40/60 split at a lower amount of applied/inlet pressure.