Combination Proportioning Valve
P/N 260-11179

WARNING

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY BRAKE COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THE 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 NOT SURE, GET HELP OR RETURN THE PRODUCT. YOU MAY OBTAIN ADDITIONAL INFORMATION AND TECHNICAL SUPPORT BY CALLING WILWOOD AT (805) 388-1188, OR VISIT OUR WEB SITE AT WWW.WILWOOD.COM. USE OF WILWOOD TECHNICAL SUPPORT DOES NOT GUARANTEE PROPER INSTALLATION. **YOU**, OR THE PERSON WHO DOES THE INSTALLATION MUST KNOW HOW TO PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR INSTALLATION.

RACING EQUIPMENT AND BRAKES MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR FATIGUE, DAMAGE, AND WEAR.

GENERAL INFORMATION:

- Simplifies mounting, fluid circuit plumbing, brake light wiring, and brake bias adjustments on modified, custom built, or competition vehicles equipped with brake system upgrades
- Maintains full separation between the front and rear fluid circuits when used with tandem outlet or dual mount master cylinder assemblies.
- Bias proportioning adjustment is provided in the rear fluid circuit.
- The front circuit has a single inlet and two outlets for optional line routing.
- A fluid port with a pressure switch responds instantly to pressure in the front fluid circuit for brake light activation. A wiring pigtail with a protective boot is included with the switch.

NOTE: *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 INSTRUCTIONS:

Mounting: If equipped, the OEM combination valve bracket may provide the ideal mounting location for the combination valve. Otherwise, position the Wilwood Adjustable Combination Proportioning Valve in a convenient location in close proximately to the master cylinder(s) using customer supplied hardware or a fabricated bracket.

Line Connections: The line connections on the Wilwood combination valve are 3/8-24 with an SAE inverted flare for standard 3/16" (-3) brake line.

1. The line from the master cylinder for the front brakes connects to the port marked "FI", (front in), on the top of the combination valve, refer to Figure 1.
2. The two ports on the bottom of the valve marked "FO", (front out), will be the supply lines to the front 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 "T" plumbed downstream, splitting the lines to feed each front caliper. The function of the valve will not change.
3. The line from the master cylinder for the rear brakes connects to the port marked "RI", (rear in), on the top of the proportioning valve.
4. The single port marked "RO", (rear out), connects to the line going to the back of the car to feed the rear calipers.

NOTE: *Tube wrenches are always preferred for tightening the fittings.*

WARNING
DO NOT OPERATE ANY VEHICLE ON UNTESTED BRAKES!
SEE MINIMUM TEST PROCEDURE WITHIN

ALWAYS UTILIZE SAFETY RESTRAINT SYSTEMS AND ALL OTHER AVAILABLE SAFETY EQUIPMENT WHILE OPERATING THE VEHICLE

IMPORTANT • READ THE DISCLAIMER OF WARRANTY INCLUDED IN THE KIT

4700 Calle Bolero • Camarillo, CA 93012 Phone 805 / 388-1188 • Fax 805 / 388-4938
www.wilwood.com • E-mail Additional Assistance: info@wilwood.com

Switch Connections: If your vehicle is already equipped with a brake light switch on the brake pedal, the switch in the combination valve does not need to be used, and it may be removed. Plug the unused port with a 1/8-27 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 block.

1. Before connecting the lead wires, cut the ends (that do not have the clip) on a 45° angle. Coat both cut ends with Dielectric Grease to ease sliding the wires through the holes in the dust boot. Slide the clips onto the spade connectors and cover with the dust boot.
2. Connect one lead of the brake light pressure 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.
3. Connect the other pressure switch wire to the lead wire going to the brake lights.
4. Be sure the brake lights are properly grounded, and all connections are secure and insulated.

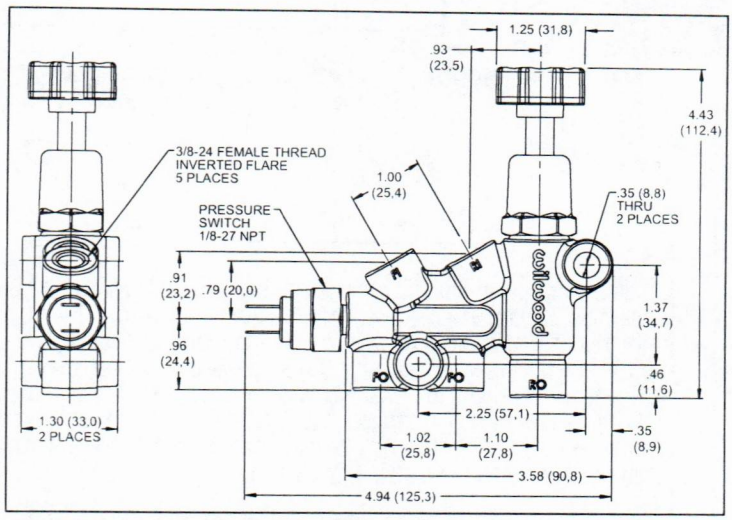

Figure 1. Combination Proportioning Valve, Knob Style, Mounting Dimensions

Fluid: The Wilwood proportioning valve block is fully compatible with all types of brake fluid including DOT 3, 4, 5, and 5.1 fluids. DOT 3, 4 and 5.1 fluids are fully miscible, but DOT 5 silicone fluid should never be mixed with any other fluids. Always follow the vehicle manufacturers fluid recommendations for any vehicle. A complete flush and fill with fresh fluid is recommended for all installations. For best performance, use Wilwood Hi-Temp 570, EXP 600 Plus, or Wilwood FIVE DOT 5 high performance fluids.

Bleeding: To properly bleed the brake system, begin with the caliper farthest from the master cylinder. For fixed mount calipers with two bleed screws on top, bleed the outboard bleed screw first, then bleed the inboard screw. Repeat this procedure until all calipers have been bled, ending with the caliper closest to the master cylinder. Once the system has been bled, the pedal should maintain a consistent, firm feel. If the pedal returns to a spongy feel after it has rested from the bleeding process, this is an indication that air still exists in the system. If this occurs, repeat the bleeding process until all air has been purged and the pedal retains a firm feel. ***NOTE:*** *When installing a new master cylinder, it is important to follow proper bench bleeding procedures. Follow the installation instructions provided with the new master cylinder. If a firm pedal can not be achieved after bleeding the system, the master cylinder may not be properly sized for the brake system.*

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. Otherwise, an out of control situation could occur.

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 30 MPH 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 50 MPH and make any additional adjustments as needed.

Help: If after following the instructions, you still have difficulty with installing, bleeding, or adjusting your Wilwood Combination Proportioning Valve, consult your chassis builder, the retailer where the valve was purchased, a qualified brake technician, or Wilwood Customer Service at (805) 388-1188.

WARNING • DO NOT DRIVE ON UNTESTED BRAKES
BRAKES MUST BE TESTED AFTER INSTALLATION OR MAINTENANCE
MINIMUM TEST PROCEDURE

- 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 (2-5 mph) 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 (15-20 mph) 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.

Combination Proportioning Valve Bracket Kit
INSTALLATION INSTRUCTIONS
Part Number 220-13189 (Left Hand) or 220-15047 (Right Hand)

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Photographic Tip:

Important and highly recommended: Take photos of brake system before disassembly and during the disassembly process. In the event, trouble-shooting photos can be life savers. Many vehicles have undocumented variations, photos will make it much simpler for Wilwood to assist you if you have a problem.

Installation Components and Parts List:

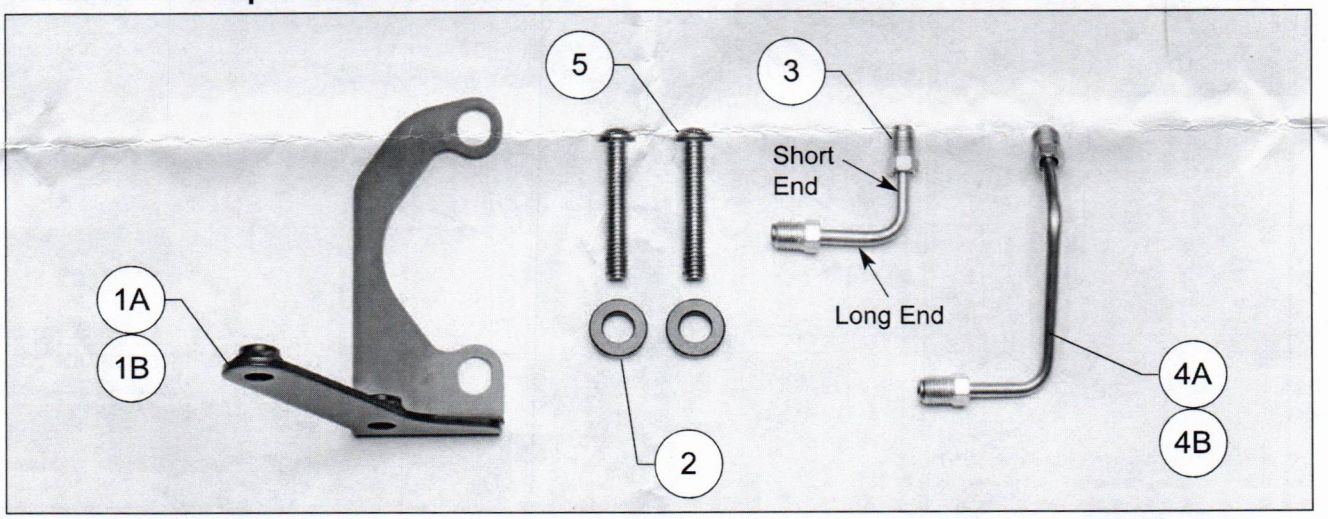

Figure 1. Proportioning Valve Installation Components (left hand shown)

ITEM NO.	PART NO.	DESCRIPTION	QTY
1A*	250-12974	Bracket, Proportioning Valve Mounting (Left Hand)	1
1B*	250-14059	Bracket, Proportioning Valve Mounting (Right Hand)	1
2	300-8764	Spacer, .215 Long	2
3	190-12972	Tube, Short, -3 IF Male to Male	1
4A*	190-12973	Tube, Long, -3 IF Male to Male (Left Hand)	1
4B*	190-14060	Tube, Long, -3 IF Male to Male (Right Hand)	1
5	230-13188	Bolt, 5/16-18 x 1.75 Long, Button Head	2

*Kit contains either 1A (left) or 1B (right) and either 4A (left) or 4B (right)

WARNING

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Installation Instructions:

(numbers in parenthesis refer to the parts list and Figures 1 and 2)

- This Combination Proportioning Valve Bracket Mounting Kit is specifically designed to work in conjunction with Wilwood's Proportioning Valve (P/N 260-11179, sold separately) and Tandem Master Cylinder (P/N's 260-8555, 260-8556, or 260-9439, sold separately). It may be used with either a manual or power booster setup.

- Mount the bracket (1) to the master cylinder using spacers (2) and existing nuts used to mount the master cylinder, as shown in Figure 2. Finger tighten.

- Install the short tube (3), "short end" into the fluid inlet "RI" in the proportioning valve, finger tighten. Install the long tube (4) into the "FI" fluid inlet, finger tighten.

- Connect the fluid tubes to the master cylinder, finger tighten. ***NOTE:*** *If connecting to a previously installed master cylinder, be sure to plug the fluid inlets immediately when disconnecting the existing fluid lines and use a container to catch any fluid that may leak.* Mount the proportioning valve to the bracket (1) using bolts (5), finger tighten. Check to be sure that everything fits and the tubes do not bind.

- Once everything is installed and aligns correctly, remove the bracket mounting nuts one at a time, apply red *Loctite*® 271 to bolt threads and torque to 25 ft-lb. Remove the bolts securing the proportioning valve to the bracket one at a time, apply red *Loctite*® 271 to threads and torque to 180 **in-lb**. Tighten tube nuts.

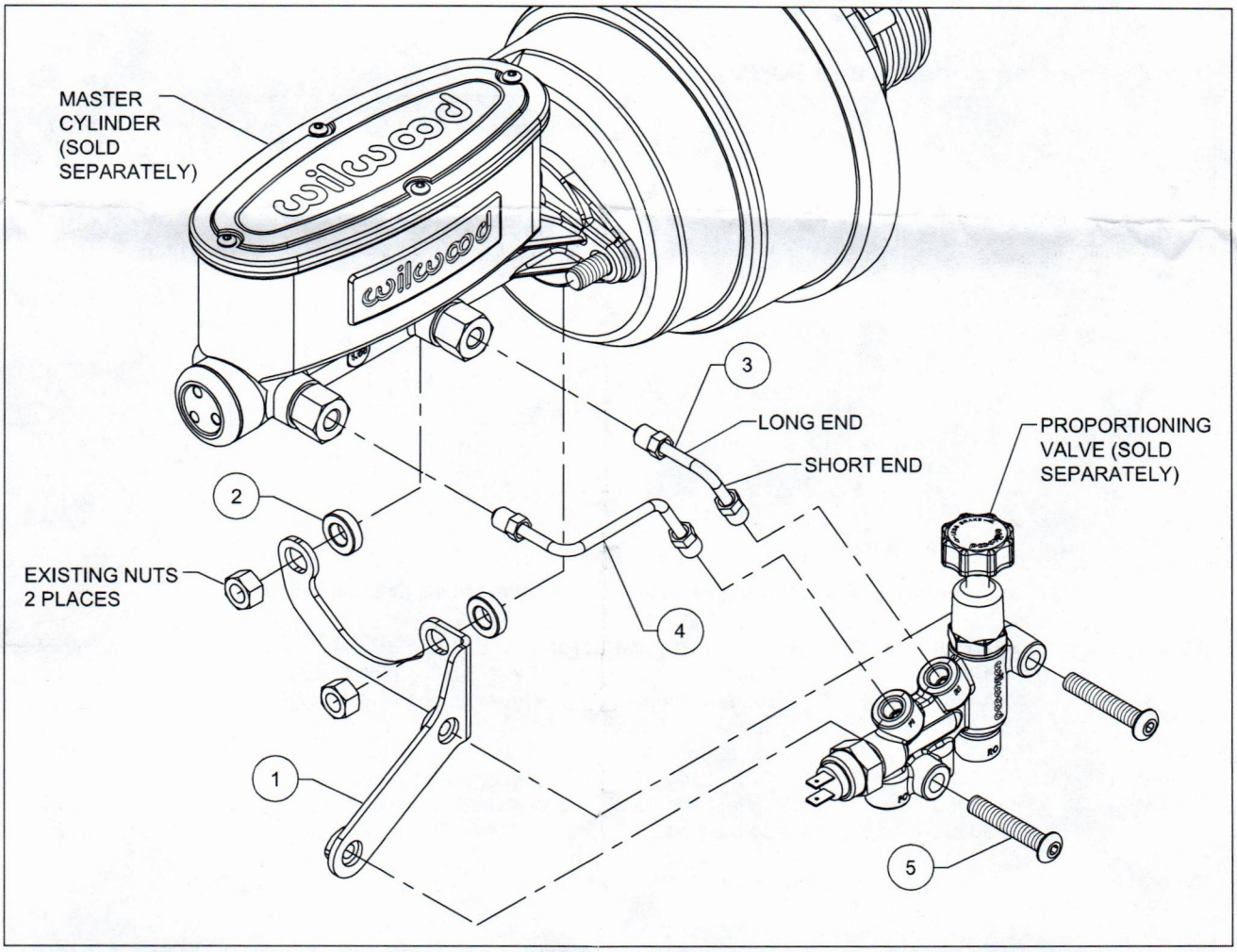

Figure 2. Proportioning Valve Bracket Kit Installation (left hand shown, right hand opposite)

Bleed The Brake System

•Fill and bleed the new system with Wilwood Hi-Temp° 570 grade fluid, or for severe braking or sustained high heat operation, use Wilwood EXP 600 Plus Racing Brake Fluid. Used fluid must be completely flushed from the system to prevent contamination (even if re-bleeding your existing system). ***NOTE:*** *Silicone DOT 5 brake fluid is* ***NOT*** *recommended for racing or performance driving, and remember to never mix different grade brake fluids.*

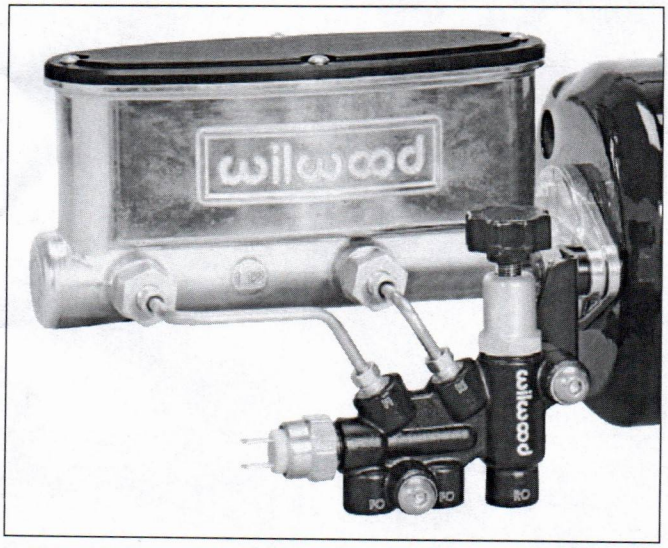

Photo 1. Proportioning Valve Bracket Kit Final Installation (left hand shown)

•To properly bleed the brake system, begin with the caliper farthest from the master cylinder. Bleed the outboard bleed screw first, then the inboard. Repeat the procedure until all calipers in the system are bled, ending with the caliper closest to the master cylinder. ***NOTE:*** *When using a new master cylinder, it is important to bench bleed the master cylinder first.* Please refer to Wilwood's data sheet DS-487 available at www.wilwood.com/PDF/DataSheets/ds487.pdf. Or access this URL below to watch the video http://www.wilwood.com/video/VideoDisplay.aspx?id=22.

•Test the brake pedal. It should be firm, not spongy and stop at least 1 inch from the floor under heavy load.

If the brake pedal is spongy, bleed the system again.

If the brake pedal is initially firm, but then sinks to the floor, check the system for fluid leaks. Correct the leaks (if applicable) and then bleed the system again.

If the brake pedal goes to the floor and continued bleeding of the system does not correct the problem, a master cylinder with increased capacity (larger bore diameter) may be required. Wilwood offers various lightweight master cylinders with large fluid displacement capacities.

•If after following the instructions, you still have difficulty in assembling or bleeding your Wilwood disc brake components, consult your local chassis builder, or retailer where the item was purchased for further assistance. Additional information is also available on our web site at www.wilwood.com, or e-mail: info@wilwood.com.

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BRAKES MUST BE TESTED AFTER INSTALLATION OR MAINTENANCE
MINIMUM TEST PROCEDURE

- 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 (2-5 mph) 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 (15-20 mph) 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.

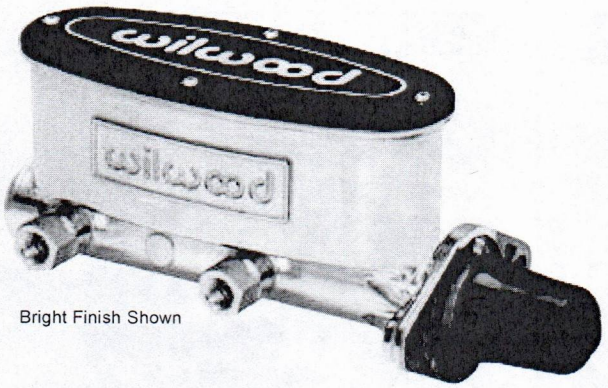
ALUMINUM TANDEM MASTER CYLINDER

SPECIFICATION SHEET • INSTRUCTIONS

Master Cylinder Part Numbers

260-8555/-P/-BK • 260-8556/-P/-BK

260-9439/-P/-BK • 260-13375/-P/-BK



Bright Finish Shown

Component	Specifications
Piston / Bore Diameter	7/8, 15/16, 1 & 1-1/8 inches
Piston Stroke / Push Rod Travel	1.10 inches
Volume Output Ratio (A/B)	2:1
Pressure Output Ratio (A/B)	50 / 50
Reservoir Capacity: Primary (A)	13.93 Cubic inches
Secondary (B)	8.43 Cubic inches

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Installation Notes and Precautions

- **WARNING:**

  The master cylinder push rod must bottom out in the bore before the pedal stops against the floorboard. *The inherent safety feature of tandem master cylinders is the ability to still build pressure in one circuit if the other fails. In the event of a circuit failure, the push rod (and pedal) may travel 50% - 80% of the total stroke before starting to build pressure in the other circuit, allowing emergency braking to stop the vehicle.*

  To take advantage of this safety feature, before adding brake fluid to the system, assure that the push rod will travel its full stroke (1.10") before the pedal stops against the floorboard (with insulation, padding, and carpet) or any other stop point. If not, adjustments need to be made to the pushrod, pedal, and/or pedal mount to allow full push rod travel.

  This master cylinder may not work in all applications and it is the installer's responsibility to determine suitability and assure full push rod travel.

- Check the length and diameter of the push rod from the pedal or power booster. It should fully engage the bottom of the recess in the master cylinder piston assembly without interference along the sides or shoulders. For short push rod power brake boosters, use the spacer supplied to reduce the overall depth of the piston recess. The piston detail diagram on page 2 illustrates the overall depth and diameter of the push-rod recess.

- When the pedal is released, the piston assembly must fully return to the snap-ring retainer at the end of the cylinder bore. Consequently, the push rod must be long enough to remain captured inside the piston recess when the pedal is fully retracted. Adjust the length of the push rod and available pedal travel as necessary. Return springs and pedal stops are always recommended.

- Always mount the master cylinder to a secure, reinforced element of the chassis. There should be no movement or deflection at the mount point when brake pedal pressure is applied.

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Bench Bleeding

- Prior to attaching the vehicle's fluid lines, it is necessary to fill the master cylinder with brake fluid and purge the air. We recommend following the instructions below to bench bleed the master cylinder. The same method can be used with the master cylinder mounted in the vehicle provided that the master cylinder reaches full travel BEFORE the pedal contacts the floor or firewall. Master cylinder must be level for proper bleeding.

1. Clamp master cylinder securely by the mounting flange in a bench vise.

2. Thread plastic fittings into the outlet ports of the master cylinder, and tighten with wrench. Install clear tubes on fitting and bend into the master cylinder reservoirs. Secure the tubes using the provided clip to make sure they stay in place.

3. Fill the reservoir with new brake fluid to approximately 1" from the top. Be sure the ends of the tubes are covered by the brake fluid.

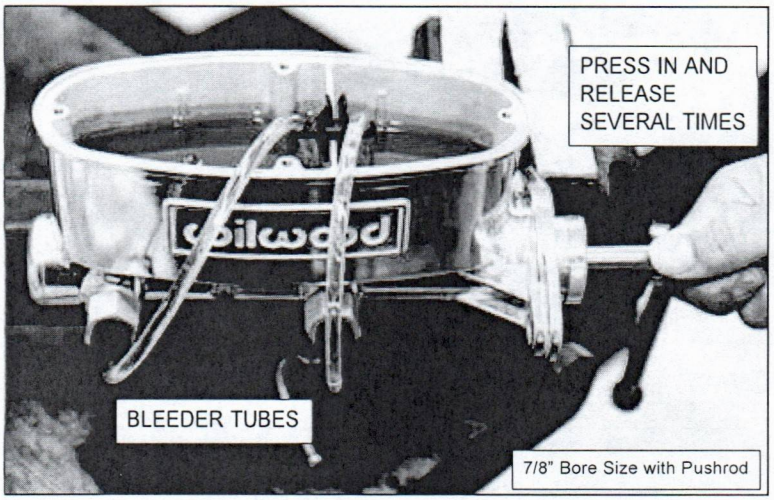
4. Push the piston into the bore until it reaches full stroke. Repeat the process until bubbles are no longer present in the clear plastic tubes. This should be achieved fairly quickly, usually with a few strokes. If not, the plastic fittings may not be tight enough.

   NOTE: *A small amount of tiny air bubbles in the tubes is generally okay and should be expelled during the system bleeding process.*

5. Remove master cylinder from vise and install on vehicle.

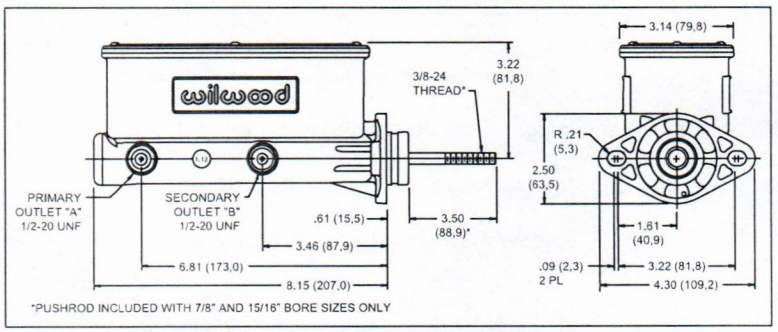
6. Now remove the bleeder tubes and nuts for the outlet ports and attach the vehicle's brake lines. Exercise care to not spill or spray brake fluid. Take all proper safety precautions including eye and skin protection and do not position your face directly above the reservoir. This process will assure a quick and effective full system bleed.

7. Once all fluid connections have been made, the complete system must be bled to remove any remaining air. Refer to the Service Manual or a bleeding sequence guide for the proper bleeding procedure. Check system for leaks prior to any test of the vehicle.

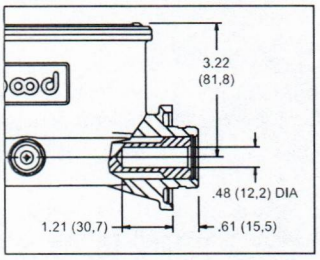


Typical Bleeder Tube Setup and Use

Scan to Watch Video
How to: Bench Bleed a Master Cylinder



Wilwood Dual Outlet Tandem Chamber Master Cylinder, Mounting Dimensions



Piston Detail • 1" and 1-1/8" Bore Master Cylinders Only

Plumbing Notes and Precautions

- Each master cylinder kit includes one 9/16-18, one 1/2-20, and two 3/8-24 inverted flare threaded line adapters for connections to the brake lines (Adapters are not installed and are shipped in the reservoir of the master cylinder, remove lid to access). Two hex head plugs are supplied to block the unused outlet ports. Pressure may be taken from either side of the master cylinder. After selecting the size and location of the outlet ports to be used, install the fittings and plugs using the aluminum crush washers and torque each to 20-25 foot pounds.

- The line adapters supplied with each master cylinder are for use with double flared brake line. Use only double flared lines. Do not attempt to use single flared connections. Do not use additional sealant or any other type of gaskets on the fittings, lines, or plugs.

- Connect one of the primary outlet ports (A) to the brakes at the end of the vehicle with the greatest total effective piston bore area. On most vehicles, this will be the front brake line (see note next page).

- Connect one of the secondary outlet ports (B) to the brakes at the end of the vehicle with the lesser total effective piston bore area. On most vehicles, this will be the rear brake line (see note next page).

- Use of reinforced flexible lines should be limited to the connection between the fixed chassis and the moving suspension. All other lines along the fixed chassis should be hard steel lines.

- On four wheel disc brake applications, where the fluid reservoir is mounted higher than the caliper bleed screws, a residual pressure valve is usually not required.

- On disc brake applications where the fluid reservoir is mounted lower than the caliper bleed screws may require a 2 pound residual pressure valve. This can prevent fluid drain back and excessive pedal travel on initial engagement.

- All drum brake applications require an inline 10 pound residual pressure valve.

- Use an adjustable proportioning valve to set the front to rear brake bias.

REBUILD NOTE:

WILWOOD TANDEM MASTER CYLINDERS ARE NOT USER SERVICEABLE DUE TO THE NECESSITY OF SPECIAL TOOLS FOR DISASSEMBLY. IN THE EVENT REBUILDING SERVICE IS REQUIRED, PLEASE CONTACT WILWOOD TECHNICAL DEPARTMENT AT (805) 388-1188 TO ARRANGE FOR RETURNING MASTER CYLINDER FOR FACTORY REBUILD AND/OR REPAIR AT A NOMINAL COST.

CALCULATING EFFECTIVE PISTON BORE AREA TO DETERMINE PLUMBING

To determine the effective piston bore area of any caliper, you must first calculate the area for each piston bore found on one side of the caliper. Use the formula " Area = (bore x bore) x .785" for each piston bore size. Then, add the areas of all pistons on that one side of the caliper to determine the total effective piston bore area. Compare the difference between the front and rear calipers and attach the line from the primary outlet "A" to the calipers at the end of the vehicle with the greater total effective piston bore area.

Tandem Master Cylinders

Part No.	Description
260-9439	7/8" Bore M/C - Standard Finish
260-9439-P	7/8" Bore M/C - Chrome P-Coat
260-9439-BK	7/8" Bore M/C - Black Finish
260-8555	1" Bore M/C - Standard Finish
260-8555-P	1" Bore M/C - Chrome P-Coat
260-8555-BK	1" Bore M/C - Black Finish

Part No.	Description
260-13375	15/16" Bore M/C - Standard Finish
260-13375-P	15/16" Bore M/C - Chrome P-Coat
260-13375-BK	15/16" Bore M/C - Black Finish
260-8556	1-1/8" Bore M/C - Standard Finish
260-8556-P	1-1/8" Bore M/C - Chrome P-Coat
260-8556-BK	1-1/8" Bore M/C - Black Finish

Components and Accessories

Part No.	Description
260-13706	2 PSI Residual Pressure Valve
260-13707	10 PSI Residual Pressure Valve
260-8419	Knob Adjustable Proportioning Valve
260-8420	Lever Adjustable Proportioning Valve

Part No.	Description
290-0632	Wilwood Hi-Temp 570 DOT 5.1 Fluid
290-6209	Wilwood EXP 600 Plus Super Hi-Temp Fluid

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MINIMUM TEST PROCEDURE

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- At very low speed (2-5 mph) 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 (15-20 mph) 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.

BLEEDER KIT INSTRUCTIONS

PART NUMBER: 260-11593

WARNING

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY BRAKE COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THE 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 NOT SURE, GET HELP OR RETURN THE PRODUCT. YOU MAY OBTAIN ADDITIONAL INFORMATION AND TECHNICAL SUPPORT BY CALLING WILWOOD AT (805) 388-1188, OR VISIT OUR WEB SITE AT WWW.WILWOOD.COM. USE OF WILWOOD TECHNICAL SUPPORT DOES NOT GUARANTEE PROPER INSTALLATION. **YOU**, OR THE PERSON WHO DOES THE INSTALLATION MUST KNOW HOW TO PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR INSTALLATION.

RACING EQUIPMENT AND BRAKES MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR FATIGUE, DAMAGE, AND WEAR.

Bench Bleeding

- This method of removing air from the master cylinder ***MUST BE FOLLOWED.*** If this step is not taken, the brake pedal will be inadequate, and serious damage to the vehicle, and/or injury to occupants may occur.

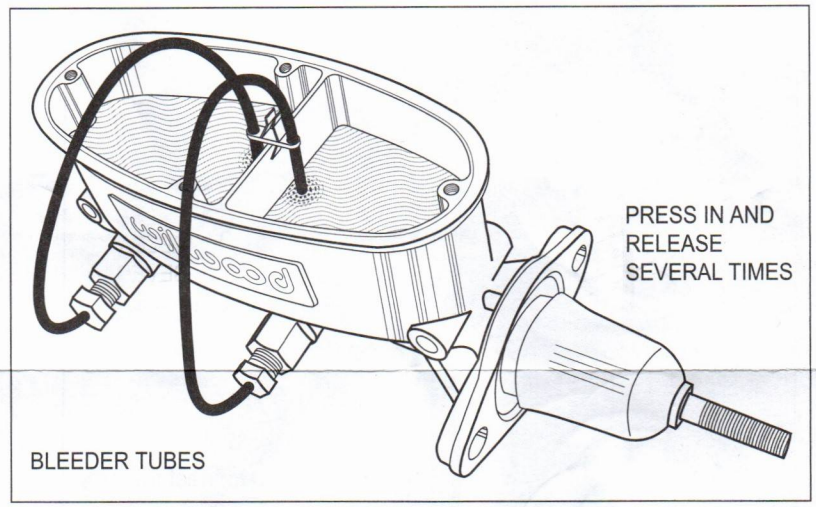
Using Bleeder Tubes

- ***NOTE:*** *This process may be done with the master cylinder mounted in the vehicle or clamped in a vise.* Install the appropriate size plastic fluid fittings into the outlet ports on the master cylinder. ***NOTE:*** *The plastic fittings must be sufficiently tight so they do not leak or draw in air past the threads.*

- Connect the plastic tubes to the fittings and insert the ends into the reservoir. Use the included clip to hold the tubes in place as shown. ***NOTE:*** *The ends of the tubes must remain submerged in the fluid at all times during the bleeding process.* Ensure that the plastic baffles are placed over the condensation holes.

- Fill the reservoirs about half way with Wilwood brake fluid from a new sealed container. Exercise care not to spill or spray brake fluid. Take all proper safety precautions including eye and skin protection and do not position your face directly above the reservoir.

- Press in and release the piston several times (using a push rod or screwdriver, if in a vise). Begin by slowly using full strokes, then a combination of long and short strokes. Stroke until there are no more bubbles evident in the reservoir. It is best if the master cylinder is level during the bleeding operation. This process will assure a quick and effective full system bleed later.



Typical Bleeder Tube Setup and Use

WARNING • DO NOT DRIVE ON UNTESTED BRAKES
BRAKES MUST BE TESTED AFTER INSTALLATION OR MAINTENANCE
MINIMUM TEST PROCEDURE

- 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 (2-5 mph) 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 (15-20 mph) 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.

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