

ASSEMBLY INSTRUCTIONS

FOR

WILWOOD

PULL TYPE CLUTCH SLAVE CYLINDER

BASE PART NUMBER

260-1333

DISC BRAKES SHOULD ONLY BE INSTALLED BY SOMEONE EXPERIENCED AND COMPETENT IN THE INSTALLATION AND MAINTENANCE OF DISC BRAKES

READ ALL WARNINGS

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.



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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

NOTE: Some cleaners may stain or remove the finish on brake system components. Test the cleaner on a hidden portion of the component before general use.

Important Notice

Wilwood's slave cylinder is universal in nature and not intended for any specific vehicle application. It is the responsibility of the person performing the installation to determine the suitability of the part, proper mounting location and technique, perform required modifications, and correctly route fluid lines.

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.

General Information

Specifications:

Description:	Wilwood Slave Cylinder
Part Number:	260-1333
Type:	Pull
Bore:	.875 inch
Stroke (travel):	1.38 inch
Recommended Master Cylinder Size:	.75 inch
Recommended Brake Fluid:	Wilwood Hi-Temp ^o 570 (DOT 3) or Wilwood EXP 600 (DOT 4)
Fluid Inlet:	3/8-24 IF or 1/8-27 NPT
Maximum Input Pressure:	1,200 PSI

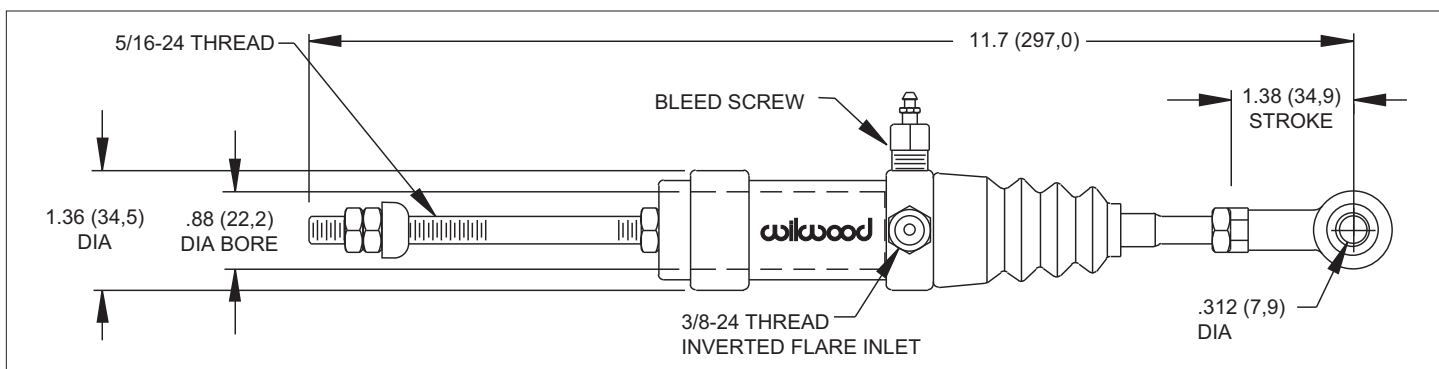


Figure 1. Slave Cylinder Physical Characteristics

Clutch Fork Modifications

Carefully determine by measuring, the correct location on the clutch fork to drill for threaded rod mount attachment, see Figure 2. This hole may not be in the same location as the original mechanical linkage contact point. However, this hole must be located in such a position to allow full engagement and disengagement of the clutch within the limits of travel of the cylinder (maximum stroke is 1.38 inches), see Figure 3.

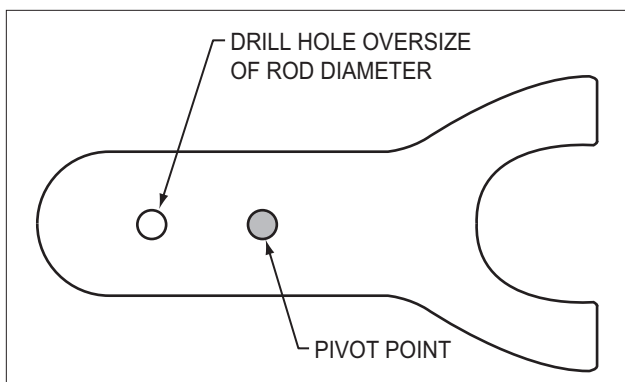


Figure 2. Clutch Fork Modification

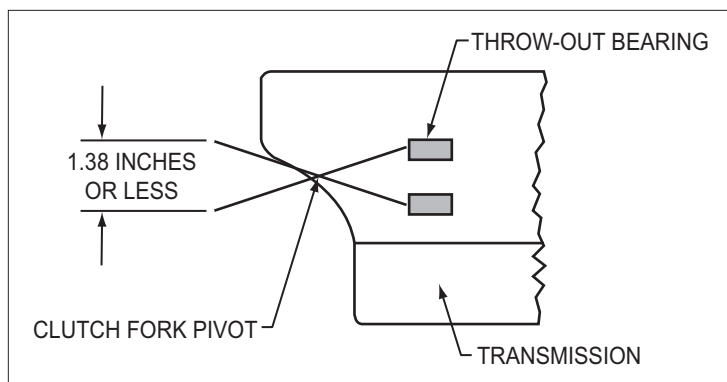


Figure 3. Limits of Travel

Clutch Fork Modifications (Continued)

Drill the hole in the clutch fork a little larger than the rod diameter to allow movement or change of angle without binding. Dependent on fork construction material,peen hole slightly or counter sink to allow wider bearing area for pivot bushing, see Figure 4.

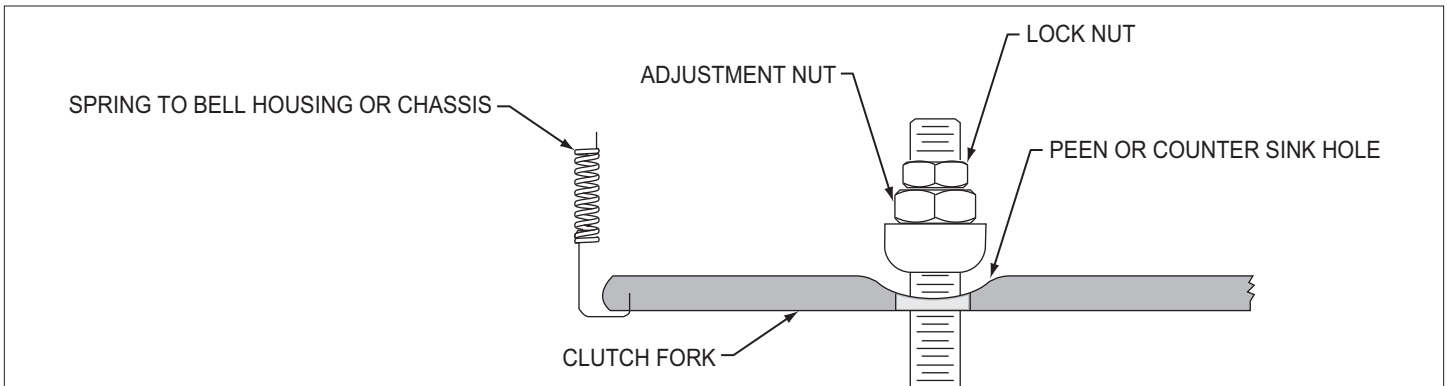


Figure 4. Clutch Fork Hole, Peen or Counter Sink

Slave Cylinder Mounting

Dependent on application, a clutch fork can either disengage the clutch by pulling toward the front of the vehicle, or by pulling towards the rear of the vehicle. The following instructions are to be utilized for a clutch fork that disengages by rearward motion (towards the rear of the vehicle).

Insert threaded rod through clutch fork mounting hole. Install pivot bushing and one adjustment nut. Hold cylinder along side of transmission. Determine if there are existing bosses or studs available to use as a mounting location for rod end (within limits of adjustment travel). If not, it may require a platform or bracket to be fabricated to hold the cylinder at the correct distance and angle. Cylinder angle must be 90 degrees from clutch fork at the apex of travel and parallel with clutch swing movement, see Figure 5. Off axis (angle) installation will cause premature wear or failure due to side loading. Do not mount slave cylinder to chassis, as engine torque movement can cause changes in engagement and binding in the cylinder.

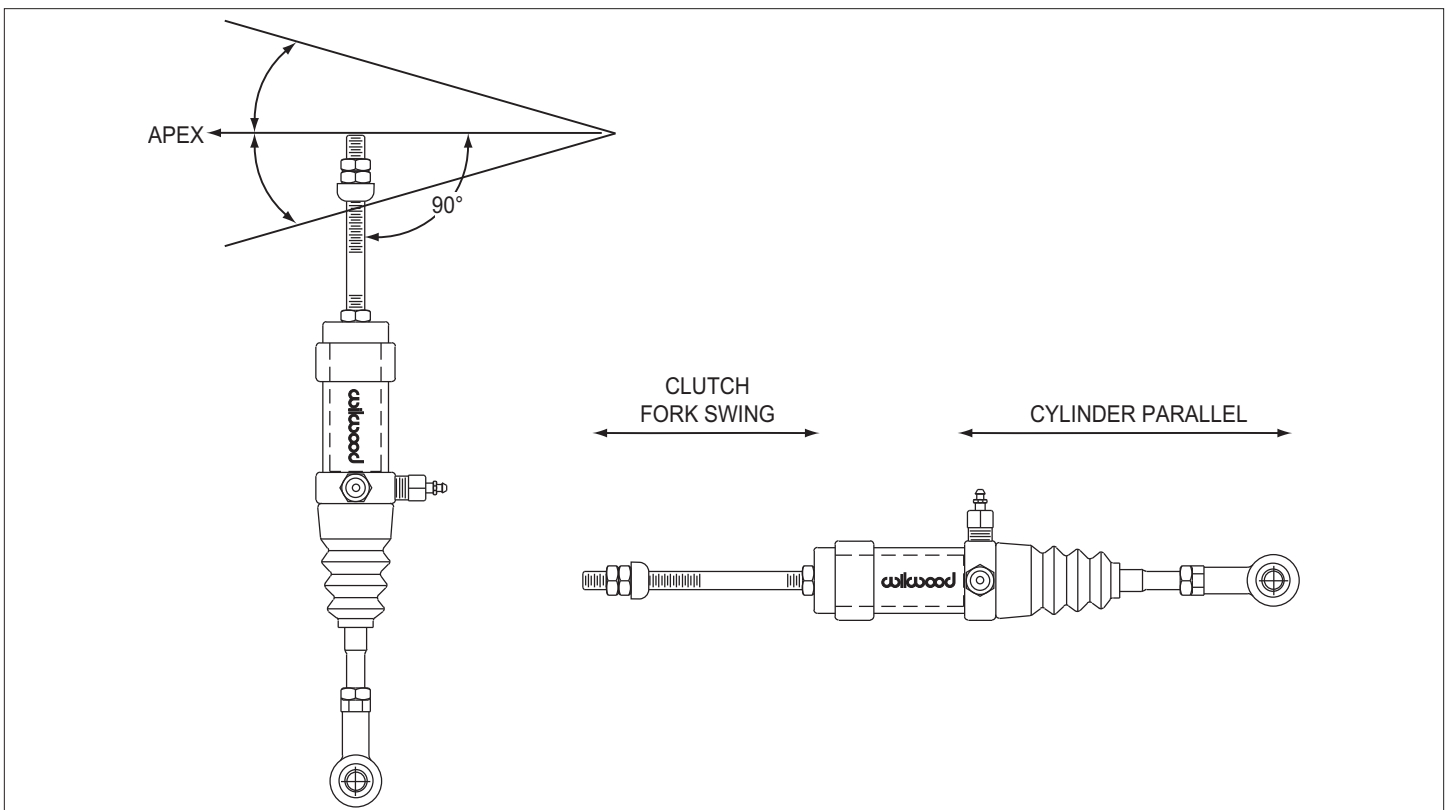


Figure 5. Slave Cylinder Mounting Requirements

Slave Cylinder Mounting (Continued)

After test fit installation, install pivot bushings and adjustment nuts. Cut excess threads on the rod mount to prevent interference, leaving enough for future adjustment purposes. Do not attempt to capture rod by mounting nuts on both sides of the fork as the rod must float. If you experience excessive movement or rattling, use a low tension spring positioned from the fork to the bell housing or chassis to help prevent movement, see Figure 4.

Mounting for a clutch fork that disengages pulling toward the front of the vehicle is similar to description outlined above, but the rod end or bracket will mount to the engine.

Install a stainless steel braided flex line (-3 is recommended size) from the slave cylinder to the chassis. 3/16" tubing is recommended for use from the chassis to the master cylinder. Carefully route lines to prevent interference with moving parts, linkage and exhaust.

Fill and bench bleed clutch master cylinder. Attach line and bleed slave cylinder. Slave cylinder will only bleed completely with bleed screw at the 12:00 o'clock position. Test to see if full travel is experienced on the slave cylinder with the full stroke of the clutch cylinder. If not, re-bleed the system.

Troubleshooting

Not enough travel on the slave cylinder:

- Trapped air in system, re-bleed the system.
- Not enough travel on the clutch pedal.
- Master cylinder sizing too small. Use .75" bore master cylinder.

Slave cylinder travel is the maximum amount (1.38"), but clutch will not fully engage or disengage within adjustment:

- Wrong location on clutch for rod mount attachment. Moving attachment point closer to clutch fork pivot point requires less slave cylinder movement, or stroke. Farther away from pivot point requires more slave cylinder movement.

Slave cylinder wears, or leaks in a short period of time:

- Check alignment of slave and clutch fork for off axis force or binding.
- Check fluid, use only Wilwood DOT 3 or DOT 4 rated brake fluids. **NOTE:** *Silicone DOT 5 brake fluid is **NOT** recommended for racing or performance driving.*

Brake Testing and Pad Bedding

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.

Pad and Rotor Bedding

BEDDING STEPS FOR NEW PADS AND ROTORS – ALL COMPOUNDS

Once the brake system has been tested and determined safe to operate the vehicle, follow these steps for the bedding of all new pad materials and rotors. These procedures should only be performed on a race track, or other safe location where you can safely and legally obtain speeds up to 65 MPH, while also being able to rapidly decelerate.

- Begin with a series of light decelerations to gradually build some heat in the brakes. Use an on-and-off the pedal technique by applying the brakes for 3-5 seconds, and then allow them to fully release for a period roughly twice as long as the deceleration cycle. If you use a 5 count during the deceleration interval, use a 10 count during the release to allow the heat to sink into the pads and rotors.
- After several cycles of light stops to begin warming the brakes, proceed with a series of medium to firm deceleration stops to continue raising the temperature level in the brakes.
- Finish the bedding cycle with a series of 8-10 hard decelerations from 55-65 MPH down to 25 MPH while allowing a proportionate release and heat-sinking interval between each stop. The pads should now be providing positive and consistent response.
- If any amount of brake fade is observed during the bed-in cycle, immediately begin the cool down cycle.
- Drive at a moderate cruising speed, with the least amount of brake contact possible, until most of the heat has dissipated from the brakes. Avoid sitting stopped with the brake pedal depressed to hold the car in place during this time. Park the vehicle and allow the brakes to cool to ambient air temperature.

COMPETITION VEHICLES

- If your race car is equipped with brake cooling ducts, blocking them will allow the pads and rotors to warm up quicker and speed up the bedding process.
- Temperature indicating paint on the rotor and pad edges can provide valuable data regarding observed temperatures during the bedding process and subsequent on-track sessions. This information can be highly beneficial when evaluating pad compounds and cooling efficiencies.

POST-BEDDING INSPECTION – ALL VEHICLES

- After the bedding cycle, the rotors should exhibit a uniformly burnished finish across the entire contact face. Any surface irregularities that appear as smearing or splotching on the rotor faces can be an indication that the brakes were brought up to temperature too quickly during the bedding cycle. If the smear doesn't blend away after the next run-in cycle, or if chatter under braking results, sanding or resurfacing the rotors will be required to restore a uniform surface for pad contact.

PRE-RACE WARM UP

- Always make every effort to get heat into the brakes prior to each event. Use an on-and-off the pedal practice to warm the brakes during the trip to the staging zone, during parade laps before the flag drops, and every other opportunity in an effort to build heat in the pads and rotors. This will help to ensure best consistency, performance, and durability from your brakes.

DYNO BEDDED COMPETITION PADS AND ROTORS

- Getting track time for a proper pad and rotor bedding session can be difficult. Wilwood offers factory dyno-bedded pads and rotors on many of our popular competition pads and **Spec 37** GT series rotors. Dyno-bedded parts are ready to race on their first warm up cycle. This can save valuable time and effort when on-track time is either too valuable or not available at all, Dyno-bedding assures that your pads and rotors have been properly run-in and are ready to go. Contact your dealer or the factory for more information on Wilwood Dyno-Bedding services.

NOTE:

NEVER allow the contact surfaces of the pads or rotors to be contaminated with brake fluid. Always use a catch bottle with a hose to prevent fluid spill during all brake bleeding procedures.

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