

INSTALLATION INSTRUCTIONS

Remote-Mount Assemblies

A. Description

Tilton Remote-mount Master Cylinder Assemblies have been designed to accommodate a variety of mounting locations and can be used in locations where standard assemblies cannot, due to space limitations or custom applications.

The aluminum frames provide a strong and lightweight assembly that is available in several configurations. The Remote-mount assemblies provide the strength and durability to handle the most severe braking conditions. The assemblies with dual brake master cylinders include the balance bar assembly. The balance bar allows the crew to adjust the brake pedal force distribution to the dual brake master cylinders. This system can be used to compensate for fuel load changes, tire wear and changing track conditions.



The Remote Brake Bias Adjuster is also an available option that connects to the balance bar and allows the driver or a crew member to make balance bar adjustments with a flick of the wrist. The balance bar adjustment knob attaches directly to the Remote-mount assembly. The assemblies can be mounted vertically or horizontally, allowing a wide range of mounting locations. Fluid reservoirs can be directly mounted to the master cylinders or can be remotely mounted based on your application. It is important to follow these setup instructions closely to realize the benefits of this design.

Installation Notes

- Securing the frame to a cross member will greatly enhance the stability of the master cylinder assembly.
- Be sure that there is no binding during the full stroke of the master cylinders when the pedal is depressed.
- The balance bar mechanism must clear all obstructions when the balance bar is adjusted to the extreme right or left-of-center.
- Determine which side the balance bar adjusting knob will be located and select the mounting location accordingly.
- If the Remote Balance Bar Adjuster is to be used, select a mounting location and trial fit it into the vehicle before installation.
- If you have decided to remotely mount the reservoirs, select the location for the reservoirs before starting installation.
- This is a gravity fed system. The reservoirs must be located above the master cylinders and calipers.
- Pedal ratios: 4.5:1 to 6.5:1, towards the higher end for heavier cars. Ratio is foot movement to master cylinder pushrod movement.
- Typical brake lockup pressure is about 60 lbs. of force on the pedal, but the system must be strong enough to withstand 200+ lbs. in a panic situation.
- System must allow master cylinder pistons to fully retract when the foot is off the pedal. Any preload will not allow the hydraulic system to function properly.
- Attention must be paid to the routing and location of the hydraulic lines. Avoid any heat sources such as exhaust pipes.
- Accurate clutch pedal setup is critically important. Improper clutch pedal installation and/or adjustment can result in expensive clutch damage and DNFs at the track!
- Use the 10.7 oz reservoir for the brake master cylinders and the 4.0 oz reservoir for the clutch master cylinder.
- The threads of the rod end, between the remote-mount assembly and the pedal assembly, are 3/8"-24.

B. Installation *(Refer to Diagrams 7 & 8 for examples of mounting styles)*

1. Trial fit the assembly with the balance bar adjusting knob or the Remote Brake Bias Adjuster attached and ensure that the driver can adjust the balance bar comfortably. Do not connect the cable to the balance bar at this time.
2. ***It is important to mount the frame rigidly so it does not move when heavy pedal force is applied.***
3. Refer to **Diagram 3, 4, 5** or **6** based on your particular assembly and mark the mounting locations in the vehicle.
4. When satisfied with the mounting locations, drill the mounting holes into the frame member.
5. Install the assembly into the vehicle using the appropriate hardware based on your application.
6. Install the master cylinders onto the pedal frame and secure them using the serrated flange nuts provided in the kit.
7. Install the remote-mount reservoirs into the vehicle if this is the configuration chosen.
8. Install the brake and clutch hydraulic lines using 3/16" hard line or AN3 steel braided lines.
9. Refer to the master cylinder instructions for the reservoir mounting and bleeding procedures.

C. Brake Pedal Setup *(Customer must fabricate or purchase brake pedal assembly)*

1. Thread the jam nuts all the way onto the master cylinder pushrods.
2. Thread the pushrods into the clevises on the balance bar assembly or the rod end in the single master cylinder assemblies.

- Adjust the pushrods evenly until the brake pedal is set up according to **Diagram 1**. This is a good starting point that may need adjustment to fit the driver.
- Adjust the connecting rod between the brake pedal and the remote master cylinder assembly to remove any free-play between the pedal assembly and the master cylinder assembly.
- To perform the balance bar setup refer to the balance bar installation instructions.
- The clevis-to-clevis center distance must be maintained at **2.5"** when using the 3/8" diameter balance bar.

D. Clutch Pedal Setup *(Customer must fabricate or purchase clutch pedal assembly)*

- Thread the jam nut all the way onto the master cylinder pushrods.
- Determine where you want the clutch pedal to be in relation to the brake pedal when the clutch pedal is in the relaxed position. This will vary based on the driver's requirements.
- Adjust the connecting rod between the clutch pedal and the remote master cylinder assembly to remove any free-play between the pedal assembly and the master cylinder assembly.
- Connect the hydraulic line to the master cylinder.
- Prime the clutch master cylinder by filling the master cylinder reservoir with brake fluid. Do not use DOT 5 silicone based or high temperature resistant brake fluids designed for more than 550° F, as some will cause the seals to swell.
- Open the bleed fitting at the master cylinder.
- Gently depress and release the clutch pedal until fluid emerges. Do not stroke the master cylinder past **1"** during this process.
- Tighten the bleed fitting.
- Fill the reservoir with brake fluid. Do not use silicone-based fluid.
- Place a light force on the pedal, such as three pounds. You want enough to hold the bearing out against the clutch diaphragm spring but not enough to compress it.
- Open the bleedscrew for the hydraulic release bearing.
- Completely stroke the pedal.
- Close the bleedscrew.
- Let the pedal return to its natural position and wait four seconds.
- Repeat steps 10-14 until all air is removed from the system.
- With the bleedscrew closed, do not stroke the master cylinder once the process is complete.
- Proceed directly to setting the pedal stop before stroking the pedal again or the clutch could be damaged.

E. Clutch Pedal Stop Setup

- Raise the vehicle onto jack stands or a hydraulic lift.
- With the engine off, put the transmission into 1st gear and have someone attempt to rotate one of the drive wheels.
- Depress the clutch pedal slowly until the clutch disengages and the drive wheel can be rotated.
- Note the clutch pedal position at this point. This is labeled "**A**" in **Diagram 2**.
- Adjust the pedal stop bolt to allow an additional **1/4"** of pedal travel past point "**A**" in **Diagram 2**. This is labeled point "**B**" in **Diagram 2**.
- Secure the pedal stop in this position.

See master cylinder instruction sheet for bleeding brakes.

F. Maintenance

Periodic inspections of the brake and clutch assemblies should be conducted routinely. Rebuild kits for master cylinders are available from Tilton Engineering.

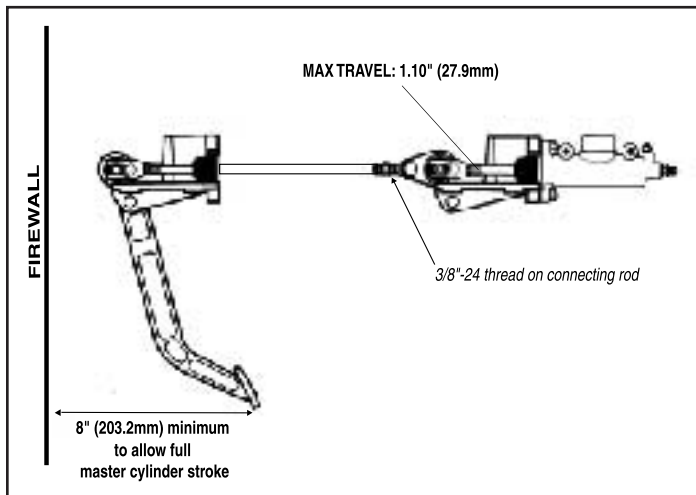


Diagram 1 - Brake Pedal Setup

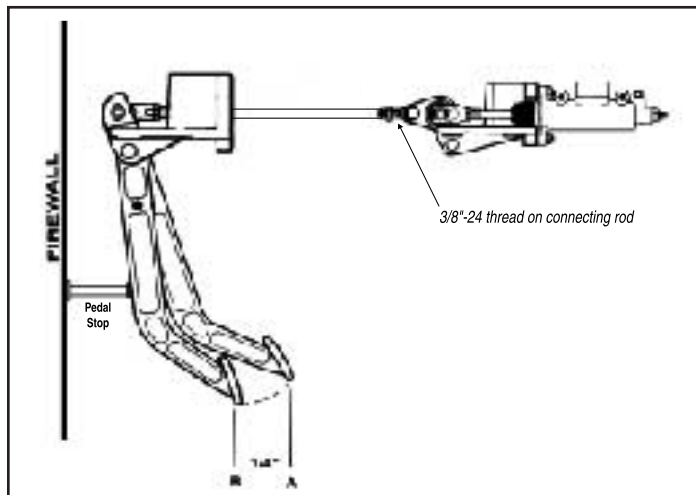


Diagram 2 - Clutch Pedal Stop Setup

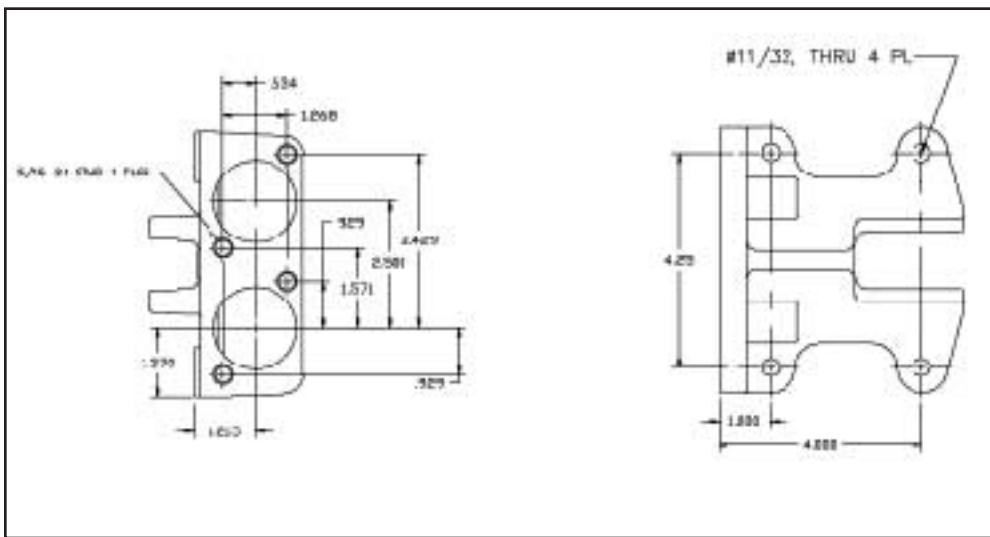


Diagram 3 - Mounting Hole and Overall Dimensions For Pedal Assemblies
For Pedal Assembly: P/N 72-650

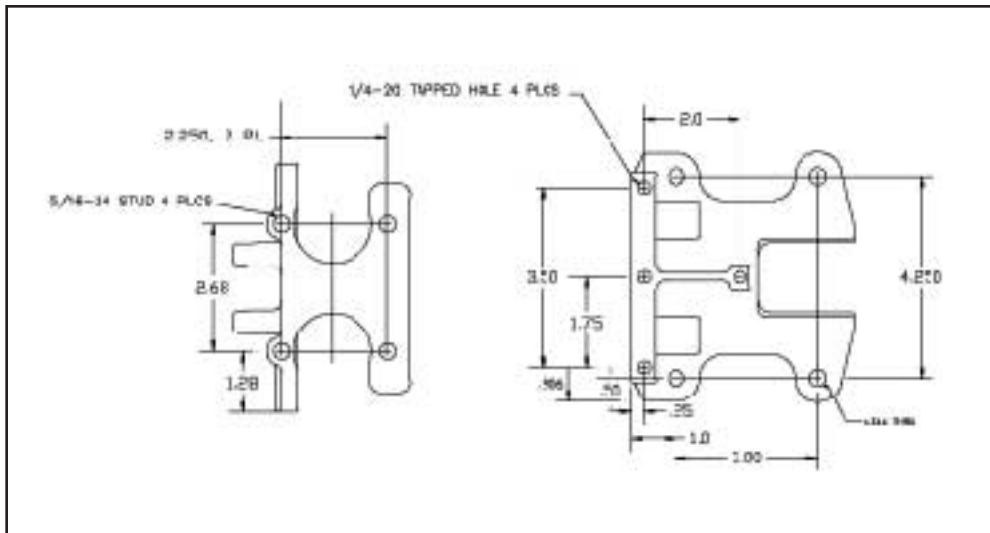


Diagram 4 - Mounting Hole and Overall Dimensions For Pedal Assemblies
For Pedal Assembly: P/N 72-610

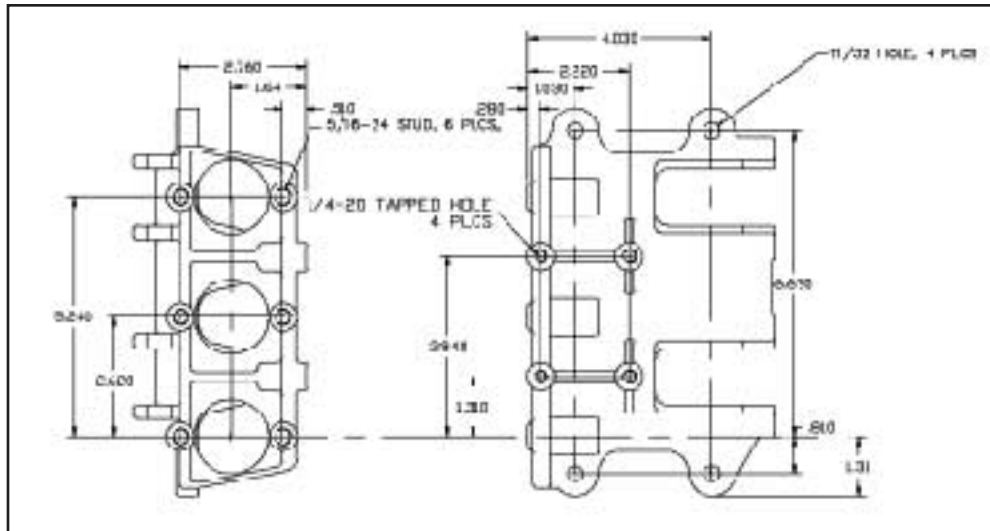


Diagram 5 - Mounting Hole and Overall Dimensions For Pedal Assemblies
For Pedal Assembly: P/N 72-630

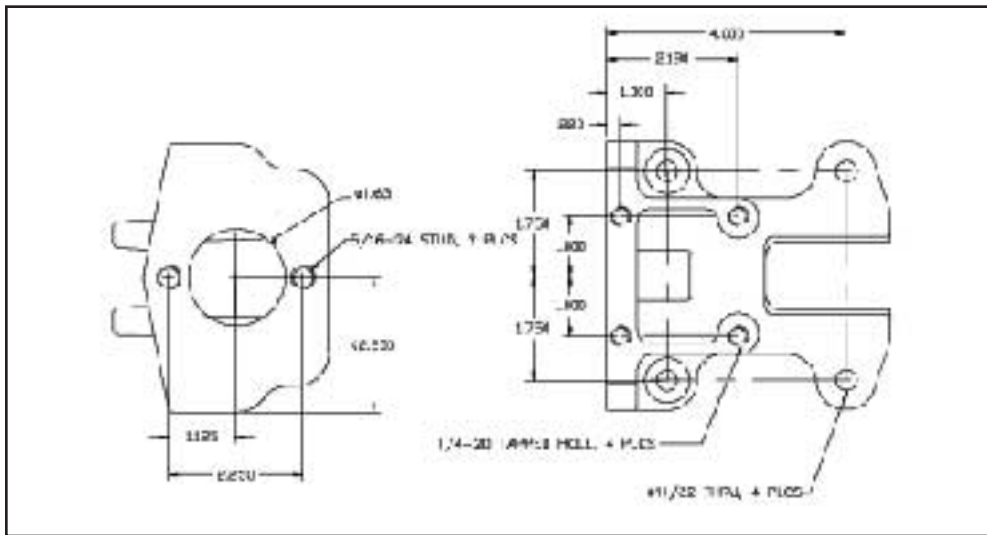


Diagram 6 - Mounting Hole and Overall Dimensions For Pedal Assemblies
For Pedal Assembly: P/N 72-673

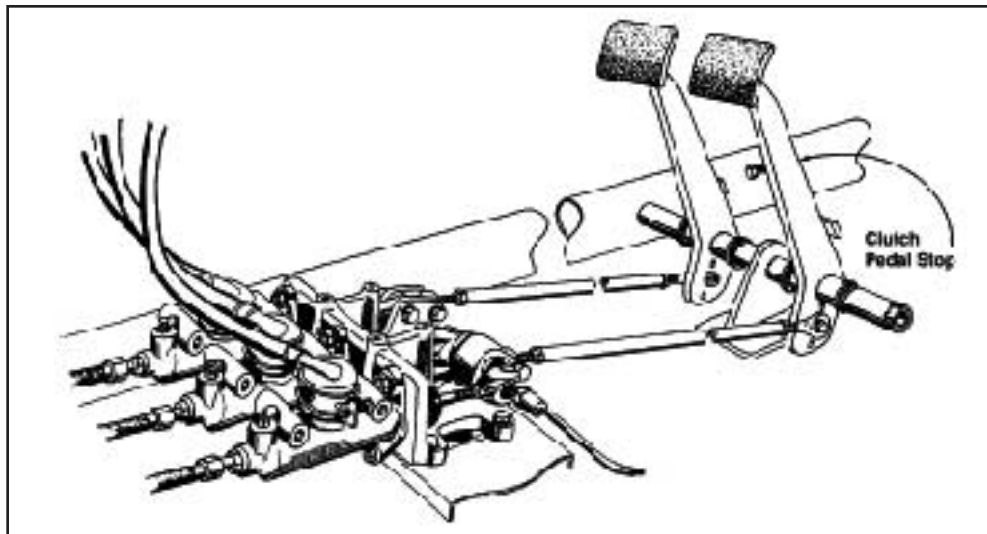


Diagram 7 - Under Seat Mounting

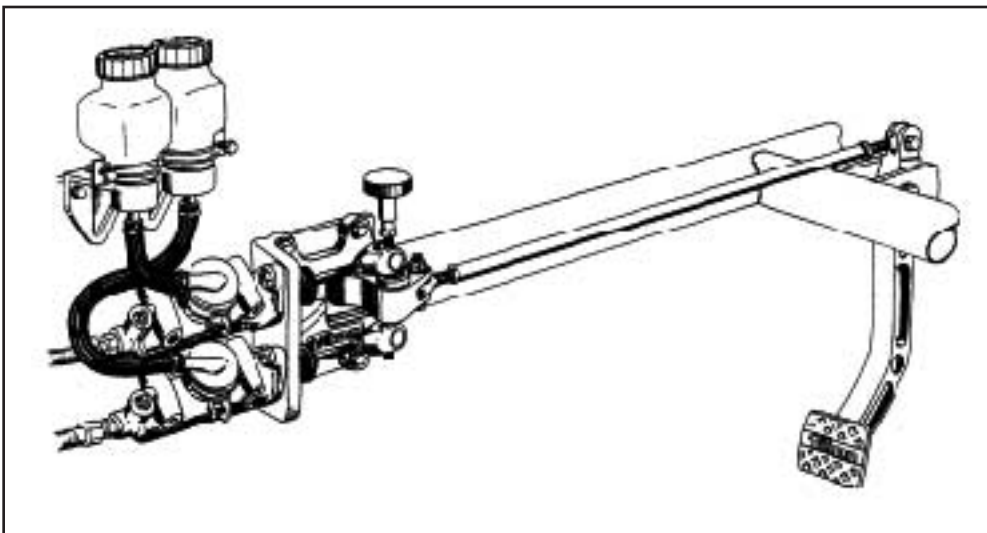


Diagram 8 - Side Mounting