



Truck Pull Clutch Assembly Instructions

All assemblies should be match balanced to your flywheel

Assemblies are not Pre-Balanced!!

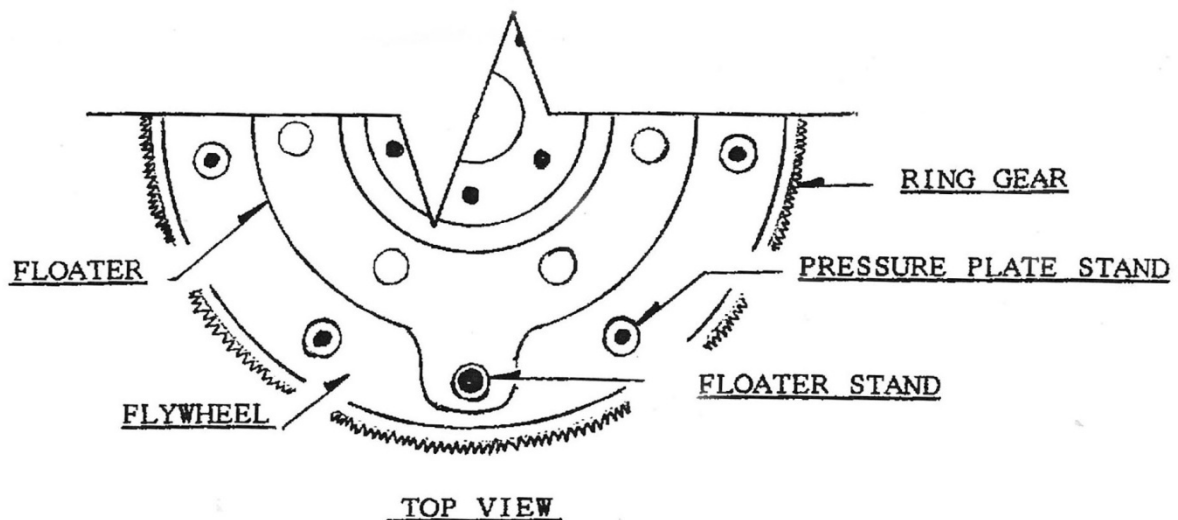
This assembly's pressure plate has an adjustable counterweight lever. This allows you to increase clutch - holding power by adding more weight to each lever if needed. McLeod assembles the unit with a 2 inch $\frac{1}{4}$ -20 Allen bolt and (6) gram weights and self-locking nut. This is a common counterweight amount. You may need more or less. If a change is desired always use an Allen headed (socket head) bolt and self-locking style nut.

The torque on the (6) pressure plate nuts should not exceed 35 ft. lbs.

The (3) $\frac{3}{8}$ -24 self-locking nuts on the (3) floater stands should not be removed unless you are replacing the floater stands.

Be sure the throw out bearing has sufficient free play at the clutch fork. The bearing will burn up if there is too little free play. .1875" - .250" ($\frac{3}{16}$ - $\frac{1}{4}$ inch) is sufficient at the fork, not pedal. If unit appears glazed from excessive slippage, holding power will diminish. Sanding of all parts to break the glaze with #36 grit paper or glass beading all parts at 40 -45 psi will restore the holding power.

Whenever the clutch assembly is out of the vehicle always measure disc thickness and check shim tolerances.



Bell Housing Alignment Procedure

When swapping a clutch, bell housing or transmission it is highly recommended you check the alignment of the bell housing to the engine block/crankshaft and to the transmission input shaft/output shaft. Think of this as a theoretical straight line running through the crankshaft, through the input shaft of the transmission and the output shaft of the transmission. Misalignment along this path can lead to leaks, poor clutch release, premature wear of components and excessively noisy operation. This inspection can be performed with a few common measuring devices and some time. Manufacturer's tolerances of engine/crankshaft

alignment can vary especially if the engine block has been modified throughout its lifetime or if you are performing a bell housing and/or transmission swap. If you find excess misalignment on your engine/bell housing you can correct the problem with off-set dowel pins. (Offset dowel Pins to correct misalignment conditions are available at your local Speed Shop). You will need a dial indicator with a magnetic base along with some typical hand tools to perform this inspection. It is critical you pay close attention to detail when performing this inspection in order to achieve accurate assembly results.

- 1) Install flywheel onto crankshaft, using proper bolts and torque to factory setting.
- 2) Be certain the engine block dowel pins stick out of the rear of the engine block at least 3/8" for proper bell housing engagement. Check the rear surface of the engine block at this time to be certain it is free of nicks or burrs that will prevent the bell housing from seating against the block.
- 3) Install just the bell housing and hold in place with a few bolts. Install dial indicator base onto crank flange or flywheel face and adjust plunger to contact the register bore of the bell housing. Rotate the crankshaft and note the indicator reading as you sweep the register bore of the bell housing.
- 4) Misalignment can be determined by dividing the change in the indicator by 2. Maximum allowable runout is .005".
- 5) If your reading exceeds .005" off-set dowel pins must be used to correct the misalignment. (Offset dowel Pins to correct misalignment conditions are available at your local Speed Shop).

This alignment procedure will eliminate premature wear on many of the transmission and clutch related components and will provide smoother operation.

When installing a clutch with a Long or Borg & Beck style pressure plate assembly you must remove the plastic spacers between the fingers and the pressure plate cover after you install the clutch. This is a simple process to perform. Using a wood dowel or the handle of a hammer you can lever the finger pressure from the finger to the cover. See photo 1 & 2. Place the wood hammer handle under the cover and over the finger and press down on the head of the hammer to release the tension holding the plastic spacer in place. Remove the spacers (3) one at a time. **Do not let your finger go between the clutch lever and the cover during this procedure or you will get pinched, as there is strong spring pressure on the lever!**



Figure 1



Figure 2

Important Clutch Installation Hints

The following check list is a reminder of the necessary inspection points and precautions required to insure a trouble-free clutch installation.

Installation / Do's

- 1) Determine cause of original clutch failure. Cause of first clutch failure (if not wear) MUST be found and corrected. If oil is present on clutch plate, cause of leak MUST be corrected before installation of new clutch unit.
- 2) Check splines on transmission input shaft for signs of abnormal wear or twisting. Slide new disc on spline by hand gently to check fit. Disc should move FREELY on splines.
- 3) Remove ALL oil or grease from friction surfaces on flywheel and cover assembly. Surfaces MUST be clean and dry. Also clean input shaft spline with a wire brush. Lubricate with dry graphite spray if needed.
- 4) To insure proper operation, friction surface of flywheel MUST be resurfaced. Check dowel pins, they must be smooth and straight.
- 5) If throw-out bearing is worn, replace it, better now than later.
- 6) Closely inspect pilot bearing or bushing for excessive wear to avoid transmission shaft misalignment. Replace it if any doubts.
- 7) Use clutch alignment tool to insure disc and cover are properly aligned with pilot bearing.
- 8) If using an aftermarket scatter shield/bell housing, checking center hole run-out is highly recommended.
- 9) Be sure all special type bolts, if any, are replaced in their proper locations.
- 10) Torque all clutch cover bolts evenly, to factory recommended spec, using a progressive "criss-cross" tightening pattern.
- 11) Before completing installation, inspect all clutch linkage parts (fork, clevis, pins, etc.) for signs of wear and replace ALL worn pieces. Grease all pivot points in linkage system.
- 12) Adjust clutch pedal "free play" to correct specifications. Throw-out bearing should not be tight against clutch fingers. 1/8" - 1/4" is recommended, except cable linkage.

Installation / Don'ts

- 1) Don't let any grease or oil contact ANY friction Surface.

Torque Specs

5/16-18 Grade 8 25 Ft/Lbs

2) Don't use an impact (air gun) to tighten cover bolts.	3/8-16	Grade 8	35 Ft/Lbs
Don't let transmission weight rest on input shaft during installation.	7/16-20	Grade 8	65 Ft/Lbs
	1/2-20	Grade 8	75 Ft/Lbs

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McLeod Racing LLC, products are warranted to be free from defects in material and workmanship for the period of ninety (90) days, from the date of purchase. McLeod does not warrant or make any representations concerning its products when not installed and/or used strictly in accordance with the manufacturer's instructions for such; installation and operation, and in accordance with good installation and maintenance practices of the automotive industry. Products purchased used do not carry a warranty. This warranty is to the original purchaser and is non-transferable.

McLeod Racing LLC will not be held liable for the labor charges and other intangible or consequent losses that might be claimed as a result of the failure of any part, nor shall it be liable for damages or injury to persons or property resulting from the misuse or improper installation of any part subject to this warranty.

No merchandise may be returned for any reason unless prior return merchandise authorization number (RMA) has been obtained from McLeod. An RMA number may be obtained via www.mcleodracing.com or by calling McLeod directly.

McLeod Racing LLC reserves the right to examine all parts returned for warranty claim to determine whether or not any such part has failed because of a defect in material or workmanship. McLeod's obligation under this warranty shall be limited to repairing, replacing or crediting, at its option, any part found to be defective. All products returned to McLeod for warranty inspection must be prepaid by the customer under this warranty.

In a racing environment, the type of stress placed on automotive parts can vary dramatically by the type of use, driving style, track preparation, differing tire style and other variables that are out of McLeod's control. For this reason, any parts used in a racing environment shall be void of any warranty either expressed or implied.

There are no other warranties, either expressed or implied including, but not limited to, warranty of merchantability, and warranty of fitness for a particular purpose which extend beyond those set forth in the preceding paragraphs. This warranty shall be interpreted and applied in accordance with California law.

For any changes or updated versions of the warrant described above, please refer to www.mcleodracing.com before installation of product.

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