



Performance Dual Disc Clutch

Installation Instructions

Please read the following instructions entirely before beginning installation of your new clutch. Information included on this document does not and cannot cover all possible problems and situations when removing and replacing driveline parts. This is only a reference guide for Ace Racing clutch components. For OE torque and measurement specs, consult a model specific factory manual for your vehicle.

- This product has been specifically designed for high horsepower street driving with occasional track use.
- Maximum RPM 7500
- There is no need to disassemble this clutch for installation. Doing so will void the warranty.
- Professional installation is recommended.
- Power/Air tools are NOT advised.
- Read entire installation instructions prior to beginning clutch installation.



Ace Manufacturing & Parts Co.
300 Ramsey Street
Sullivan, MO 63080
(800)325-6138

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PERFORMANCE DUAL DISC CLUTCH INSTALLATION INSTRUCTIONS

Prior to clutch installation, the vehicle should be driven and tested for any powertrain issues. Make note of pedal feel, shifting ability, as well as any vibrations as these could indicate more issues other than clutch wear or failure. Not servicing these other issues at time of clutch replacement could cause premature wear and possible failure of the new clutch, as well as voiding any warranty.

1. Remove transmission per shop manual.
 - a. This is the time to inspect your transmission seals and bearings. If the input shaft is loose or the seal is leaking, this will cause damage to the new clutch and greatly decrease vehicle performance.
 - b. Be sure to check clutch linkage for wear and tear. Make sure the cable is not frayed or crimped and has a full range of motion. If you have a hydraulic system, check for leaks as well as fluid level and condition. Replace and flush if necessary.
2. Inspect input shaft for damage, burring or twisting.
 - a. After cleaning, apply a very small amount of high temp grease (such as wheel bearing grease) to the input shaft splines only. Anything less viscous, like anti-seize, may not cling to the rotating part. Install the disc on the shaft and move it back and forth, removing all excess grease squeezed through the hub. Before installing the clutch use the disc to ensure there is no twist or damage on the input shaft. To do this, take the disc and slide it the length of the input shaft making sure it is free to move the entire length of the input shaft in both directions.
3. Remove existing clutch/pressure plate assembly and friction disc.
4. Remove existing flywheel.
 - a. Take caution when removing the flywheel so not to disturb the crank sensor tone ring (if equipped) located between the crankshaft and the flywheel. Note: If the tone ring is disturbed it can result in a check engine light and may need to be re-calibrated.
5. Inspect flywheel mounting surface to ensure it is free of contamination, damage, or burrs. Failure to do this could result in the flywheel not seating correctly.
 - a. This is the perfect time to inspect your bottom engine seals and bearings. If rear main seal is leaking, this will cause damage to the new clutch and greatly decrease vehicle performance.
6. Replace pilot bearing/bushing.
7. Install dowel pins in flywheel if included in kit. CAUTION: Dowel pins must be press fit.
8. Install new or resurfaced flywheel.
 - a. NEVER INSTALL A NEW CLUTCH ON A FLYWHEEL THAT HAS NOT BEEN RESURFACED OR REPLACED.
 - b. Some applications use torque to yield bolts and need to be replaced every time. If unsure, use new flywheel mounting bolts.
 - c. Torque to shop manual specifications. CAUTION: Overtightening of flywheel mounting bolts may result in crankshaft damage and oil leaks at the rear main seal.
9. Before mounting clutch assembly to flywheel, clean the flywheel and floater with a brake cleaner. DO NOT spray brake cleaner directly on floater. Instead, spray onto towel and then apply cleaner. DO NOT touch the friction material with greasy hands!
10. Install the provided alignment tool through the clutch into and through rear disc, then install the front disc on the alignment tool paying careful attention that the disc is oriented correctly.
11. Carefully insert alignment tool in pilot bearing/bushing and align cover assembly with clutch mounting bolt holes using the template on the clutch to ensure proper orientation. Dowel pins, if included, will align once bolt holes are positioned correctly. The cover assembly is designed to only go on the flywheel one way, so do not try to force it.
12. Install and finger tighten the clutch mounting bolts.

13. Torque the clutch assembly mounting bolts to proper specifications (depending on application) using a star pattern.
- a. $5/16-18 \times 3/4" = 24$ ft-lbs
 - b. $3/8-16 \times 1" = 45$ ft-lbs
 - c. $M8 \times 1.25 \times 20\text{mm} = 24$ ft-lbs
 - d. $M10 \times 1.5 \times 25\text{mm} = 54$ ft-lbs
14. Remove alignment tool and proceed to Release Bearing Setup below.

Release Bearing Setup - Using Supplied Setup Tool

- A. Assemble Release Bearing Setup tool included in kit (Diag. A1)
NOTE: Bearing adjustment locator is to be determined by the type of bearing used. (Diag. A2)
- B. Place tool with arch opening over the installed clutch assembly resting the feet firmly against the block or the block plate where the bell housing mates against the engine. (Diag. B) (If straight edge bar causes interference, it can be removed for additional clearance.)
- C. Slide locator towards clutch diaphragm fingers where the release bearing will ride. Tighten thumb screw. (Diag. C)
- D. The setup tool is now set. (Reinstall straight edge bar if removed in step 2.)
- E. Place the straight edge bar of the tool flat across the bell housing mating surface. (Diag. D)

Adjustable Bearing Style

1. The flat edge of the locator is where the release bearing needs to be set. This measurement needs to be taken with the bearing fully compressed towards the transmission (Diag. E)
2. Adjust release bearing to the correct height and verify setting with the bearing setup tool. Touching (0) to less than an $1/16"$ away from bearing surface. (Diag. F)

NOTE: If input bearing retainer is visible in notch, use tool as a guide, mark, and cut off excess (Diag.G)

Non-Adjustable Bearing Style

1. The flat edge of the locator is where the release bearing needs to be set. This measurement needs to be taken with the bearing in the extended position. (Diag. H)
2. Remove and re-install release bearing using supplied studs/shims adjusting to the correct height and verify setting with the bearing setup tool. Touching (0) to less than an $1/16"$ away from bearing surface. (Diag. I1/I2)

NOTE: We recommend that the stock plastic hydraulic line be upgraded to a steel braided line to reduce line swelling due to heat and enhanced clutch performance.

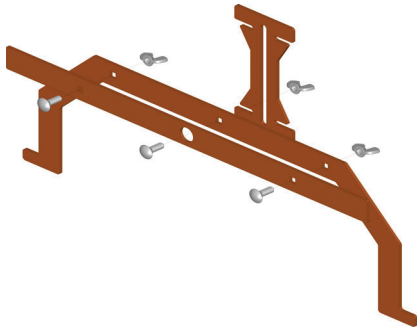
NOTE: It is recommended that a new release bearing be installed every time a clutch is changed.

15. Re-install transmission taking caution not to hang transmission on the clutch disc or forcing the input shaft splines into the clutch disc. It is recommended that the transmission be put in gear before installation. This will aid in the spline alignment by being able to turn the input shaft with the output shaft, or by slightly rocking the transmission back and forth. Torque transmission mounting bolts per shop manual.
16. When using a hydraulic release bearing, fully bleed the hydraulic system per shop manual.

With any release system, this clutch is designed to have a diaphragm stroke of $3/8"$ for full release, so having proper adjustment is critical. Verify that the clutch engages and disengages properly BEFORE starting vehicle. To check for proper engagement and release bearing travel, put in higher gear, press clutch pedal and rotate output shaft using drive shaft if necessary. Slowly release pedal until unable to turn. This ensures enough travel for full release and avoids damaging parts beyond use before starting. The addition of a clutch pedal stop may be necessary to achieve proper diaphragm stroke.

RELEASE BEARING SETUP TOOL

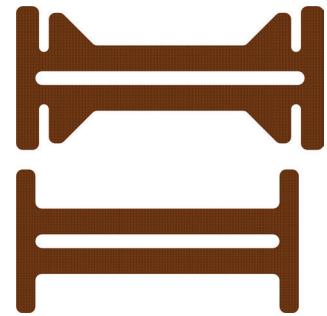
Diag. A1



Adjustable Bearing Locator



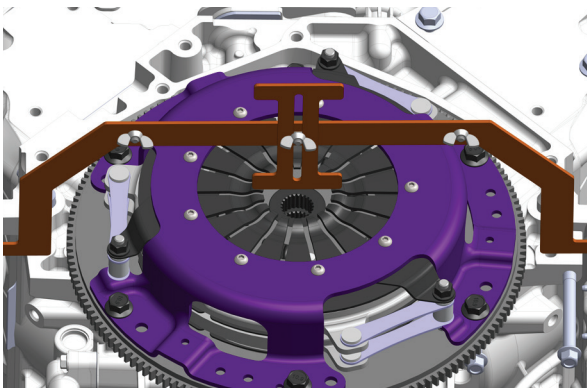
Diag. A2



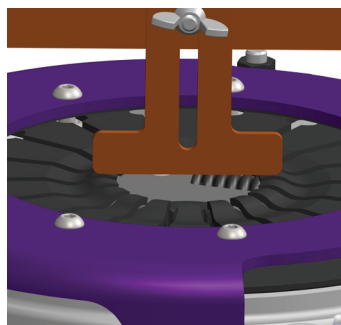
Non-Adjustable Bearing Locator



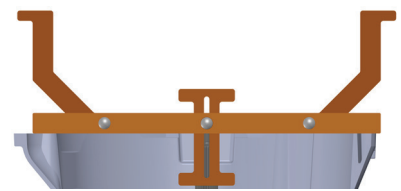
Diag. B



Diag. C

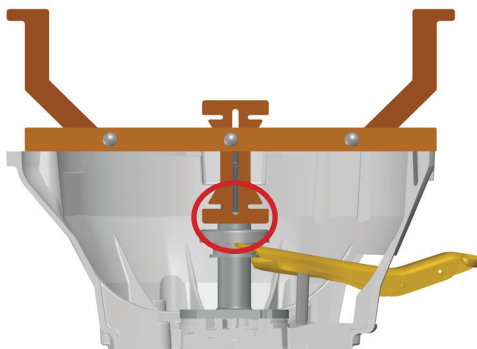


Diag. D

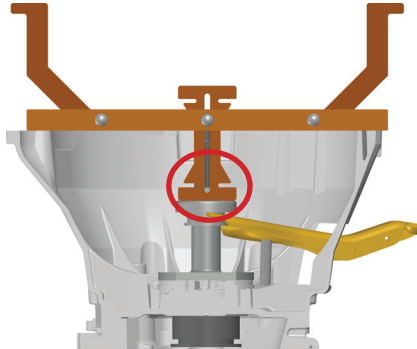


Adjustable Bearing Style

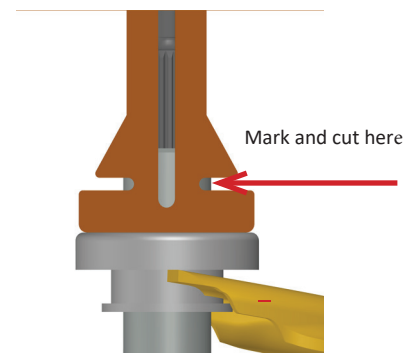
Diag. E



Diag. F

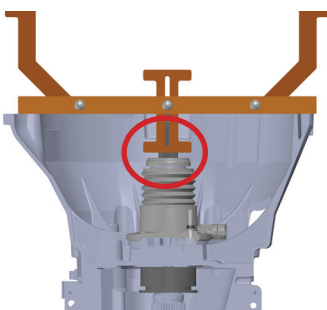


Diag. G

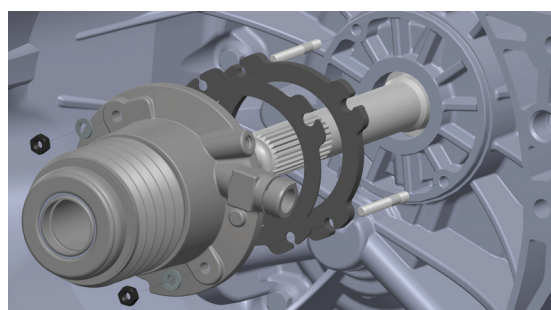


Non-Adjustable Bearing Style

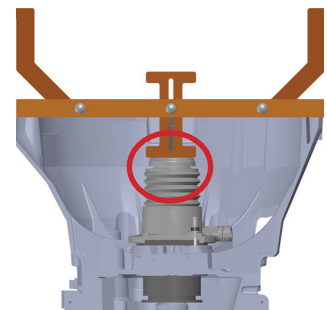
Diag. H



Diag. I1



Diag. I2



MANUFACTURER'S WARRANTY

This clutch is warranted against defective material or workmanship for a period of six months from the date of initial retail purchase, conditions apply. Conditions include: failure to replace pilot bearing/bushing, the flywheel is not replaced or re-surfaced at time of installation; or if the unit has been dropped, tampered with, disassembled, repaired, altered, improperly installed, or used in an application other than that for which it was originally intended. Friction materials used in this clutch are specifically excluded. This warranty is void if the manufacturer's installation procedures are not followed. Warranty is restricted to the original purchaser. Acceptance of any claim against this warranty is contingent on Ace Manufacturing having received the clutch; date purchased; proof the pilot bearing/bushing has been replaced; proof that the flywheel has been re-surfaced or replaced at time of installation; information showing vehicle type; engine make, model, horsepower and torque rating. Warranty action is limited to repair or replacement, at the complete discretion of Ace Manufacturing & Parts Company, Inc. No returned unit will be accepted under this warranty unless prior approval has been obtained from Ace Customer Services and identified with a returned materials authorization (RMA) number. Freight on returns must be prepaid. This warranty is in lieu of any other warranty, whether expressed or implied, including without limitation any implied warranty, merchantability or fitness of purpose. In no event shall Ace Manufacturing & Parts Company, Inc. be liable for labor charges, indirect, incidental, or consequential damages resulting from the use or any claimed failure of this unit. Contact your dealer for the warranty claim form and procedure.

Clutch problems are frequently attributed to adjustment and/or release system malfunction. The following list is common issues that are not covered under warranty.

- Worn Diaphragm fingers
- Hot spots on friction surfaces
- Lubricant on friction surfaces
- Damaged or worn friction material
- Damaged or broken disc hub and/or carrier
- Broken hub springs
- Worn bearing face

TECHNICAL SUPPORT
1-800-325-6138

Clutch Installation Record

Date/Place of clutch kit purchase: _____

Date of clutch installation: _____

Clutch kit installed by: _____

Vehicle Information:

Year _____

Make _____

Model _____

HP/Torque _____ / _____

Engine _____

Transmission _____

Other parts replaced at time of clutch installation: _____

Notes: _____



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