

Important Manual Transmission Clutch Installation Guidelines

Save Time & Money – Do The Job Right The First Time!

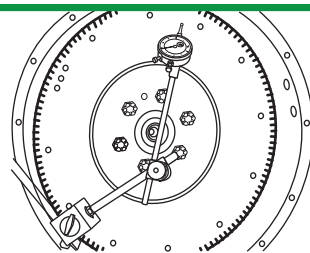
1 MEASURE

MEASURE ENGINE FLYWHEEL HOUSING AND FLYWHEEL

Engine flywheel housing and flywheel must meet these specifications or there will be premature clutch wear. Remove old Pilot Bearing. All gauge contact surfaces must be clean and dry. Use a dial indicator and check the following:

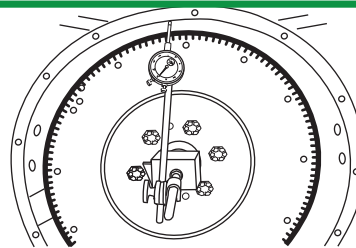
Flywheel Face Runout

Secure dial indicator base to flywheel housing face. Put gauge finger in contact with flywheel face near the outer edge. Rotate flywheel one revolution. Maximum runout is .008" (.20 mm).



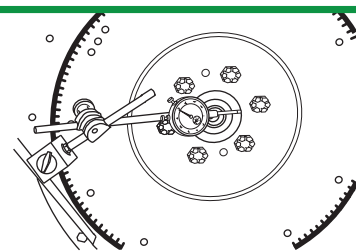
Flywheel Housing I.D. Runout

Secure dial indicator base to crankshaft. Put gauge finger against flywheel housing pilot I.D. Rotate flywheel one revolution. Maximum runout is .008" (.20 mm).



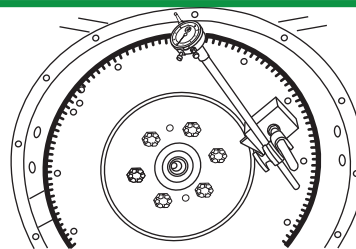
Pilot Bearing Bore Runout

Secure dial indicator base to flywheel housing face. Position gauge finger so that it contacts pilot bearing bore. Rotate flywheel one revolution. Maximum runout is .005" (.13 mm).



Flywheel Housing Face Runout

Secure dial indicator base to flywheel near the outer edge. Put gauge finger in contact with face of flywheel housing. Rotate flywheel one revolution. Maximum runout is .008" (.20 mm).



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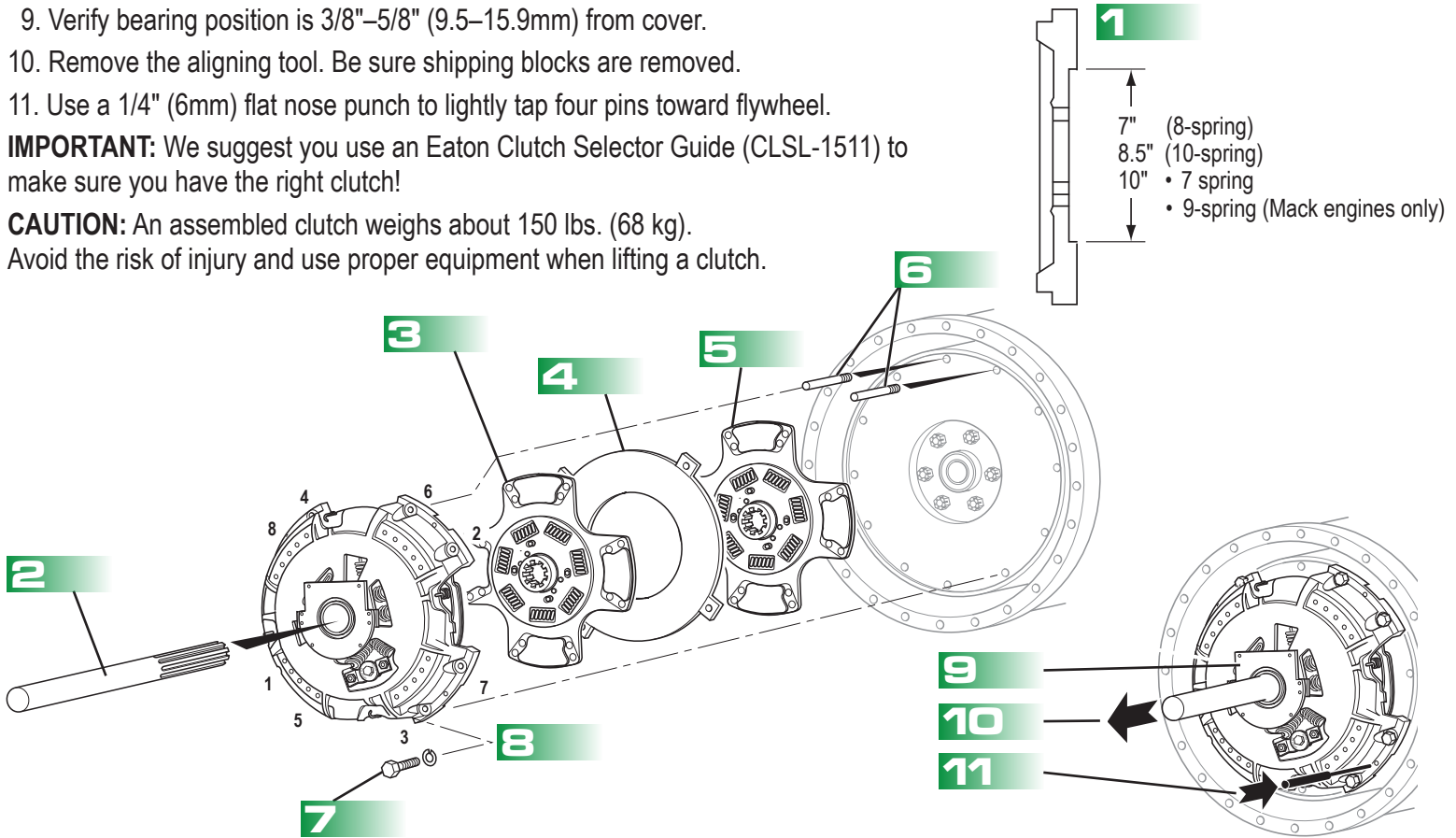
2 INSTALL CLUTCH TO FLYWHEEL

FOR 15.5" CLUTCH ONLY:

1. Measure the flywheel bore. Use a Clutch Selector Guide to verify that the damper will fit into the flywheel bore.
2. Insert aligning tool through bearing
3. Install disc onto aligning tool. Follow the orientation instructions on the disc.
4. Install intermediate plate into slots on the clutch cover. Flywheel Side must face the flywheel.
5. Install second disc onto aligning tool. Follow the orientation instructions on the disc.
6. Install two 7/6" x 14 UNC x 5" studs into upper mounting holes. Install assembled clutch.
7. Install lock washers and mounting bolts (7/16" x 14 UNC x 2 1/4" grade 5) finger tight. Replace studs with lock washers and bolts.
8. Progressively tighten mounting bolts in a crisscross pattern starting with a lower bolt. Torque to 40–50 lbs. ft. (54–68 N•m).
9. Verify bearing position is 3/8"–5/8" (9.5–15.9mm) from cover.
10. Remove the aligning tool. Be sure shipping blocks are removed.
11. Use a 1/4" (6mm) flat nose punch to lightly tap four pins toward flywheel.

IMPORTANT: We suggest you use an Eaton Clutch Selector Guide (CLSL-1511) to make sure you have the right clutch!

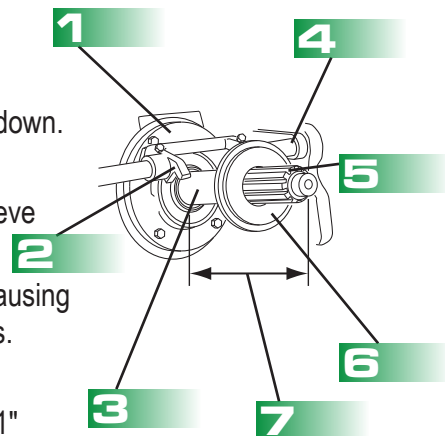
CAUTION: An assembled clutch weighs about 150 lbs. (68 kg).
Avoid the risk of injury and use proper equipment when lifting a clutch.



3 INSTALL TRANSMISSION

CHECK TRANSMISSION FOR WEAR. Replace any worn components.

1. **Transmission Bearing Retainer Cap.** A worn/rough bearing retainer cap may cause the clutch brake to wear prematurely.
2. **Release Yoke.** Worn fingers can cause bushing wear and yoke interference when the pedal is down.
3. **Input Shaft.** Wear (roughness) can reduce sleeve bushing life and cause it to come out.
4. **Cross Shaft and Bushings.** Excessive wear at these points can cause side loading on the sleeve bushing, bushing failures and yoke bridge contact with the clutch when the pedal is down.
5. **Input Shaft Splines.** Any wear on the splines will prevent the driven discs from sliding freely, causing poor clutch release (clutch drag). Slide discs full length of shaft to check for twisted shaft splines.
6. **Clutch Brake.** Replace.
7. **Measure Input Shaft.** Length should be 8.657" (219.89 mm) nominal, and not greater than 8.71" (221.23 mm). Ref. 1990 SAE handbook 4:36.106. Replace transmission bearing retainer cap if length is greater than 8.71" (219.89 mm).



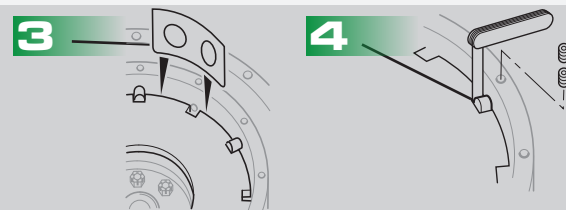
FOR 14" CLUTCH ONLY:

1. Ensure the correct flywheel depth is 2-15/16".
2. Put front disc into flywheel with flywheel side toward engine and mount intermediate plate onto pins using new slots.

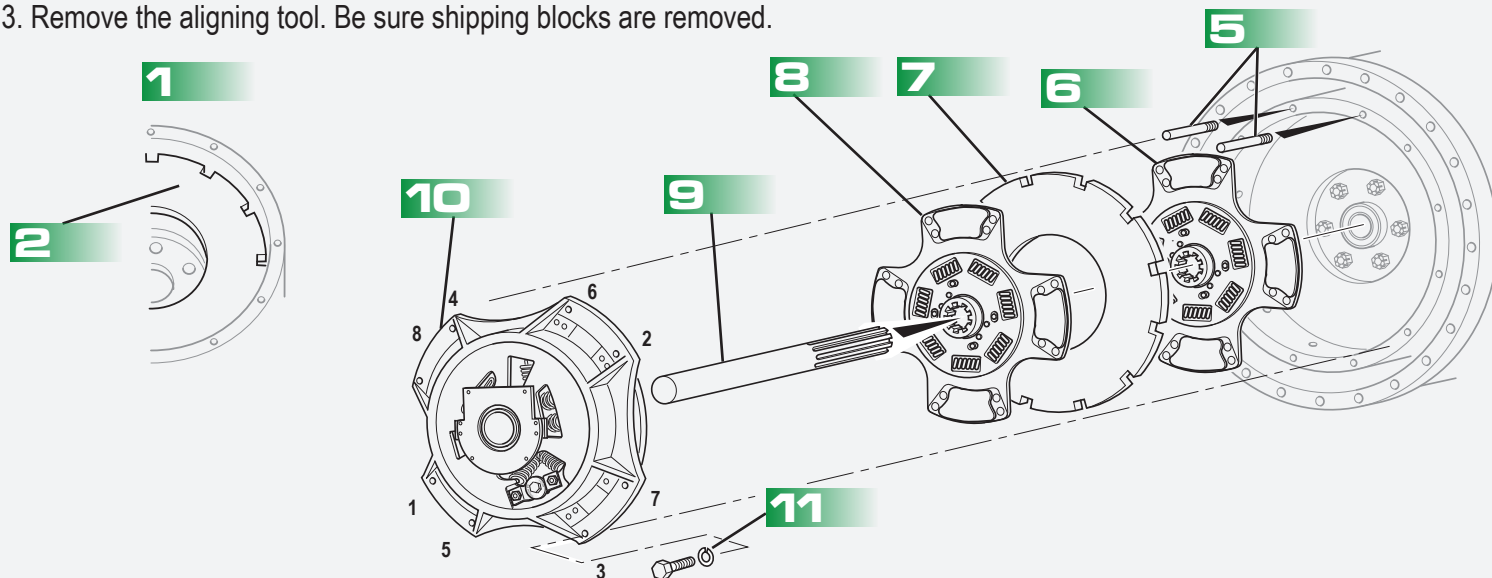
Super-duty clutch only:

3. Install three equally spaced anti-rattle springs
4. Turn intermediate plate left. Use .006" feeler gauge to check left pin clearance on all 6 drive pins.

Note: Straighten pins to increase clearance. Do not file slots.



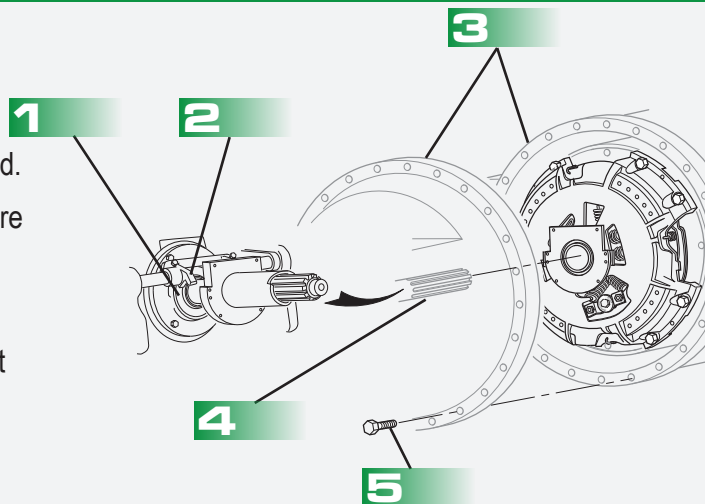
5. Install two 3/8" x 2 1/2" studs into upper mounting holes.
6. Install disc into flywheel. Follow the orientation instructions on the disc.
7. Install intermediate plate onto drive pins.
8. Install second disc into flywheel. Follow the orientation instructions on the disc.
9. Insert aligning tool through discs.
10. Slide cover over aligning tool.
11. Install lock washers and mounting bolts (3/8" x 1 1/4" grade 5) finger tight. Replace studs with lock washers and bolts.
12. Progressively tighten mounting bolts in a crisscross pattern starting with a lower bolt. Torque to 25–35 lbs. ft. (34–47 N•m).
13. Remove the aligning tool. Be sure shipping blocks are removed.



FASTEN TRANSMISSION TO FLYWHEEL HOUSING

Transmission installation and clutch set-up procedures are the same for the 14" and 15.5" clutch.

1. Put transmission in gear. Be sure new clutch brake has been installed.
2. Make sure that the yoke fingers remain in the up position until they are over the release bearing housing.
3. Position transmission so it is square to and aligned with engine.
4. Mesh splines by moving transmission forward and rotating the output shaft. Do not use excessive force. Do not let the transmission hang unsupported in the discs.
5. Install mounting bolts and torque to OEM specs.



4 SET-UP & LUBRICATE

ADJUST BEARING POSITION

1. Measure the distance between the release bearing and the clutch brake.
The correct distance should be .500" – .560" (12.70 – 14.22 mm). If correct go to Step 3.
2. To change bearing position, you must internally adjust the clutch. Push pedal and hold pedal down when adjusting. Follow instructions for Kwik-Adjust or Value Clutches.

Kwik-Adjust Clutches Push and turn adjusting nut. Clockwise moves the bearing toward transmission.

Value Clutch Remove lockstrap, then rotate adjusting lugs left to move bearing toward transmission. Replace lockstrap.

VERIFY CLUTCH BRAKE SQUEEZE

3. Insert .010" (.25 mm) feeler gauge between the release bearing and the clutch brake. Press the pedal down to clamp the gauge.
 - If the gauge does not clamp, adjust linkage to achieve clutch brake squeeze then recheck **Step 3**.
4. Slowly let up on the pedal and check the pedal position at the moment the gauge can be removed.
 - If the pedal is less than 1/2" (12.7 mm) or more than 1" (25.4 mm) from the floor when the gauge can be removed, readjust the linkage. (Repeat **Steps 3** and **4**.)

VERIFY FREE-PLAY

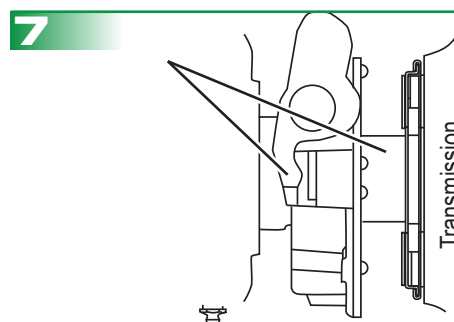
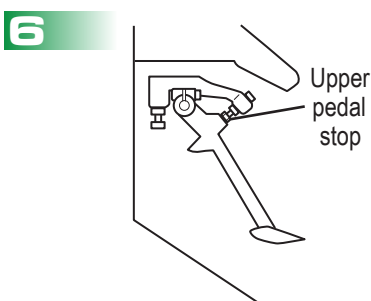
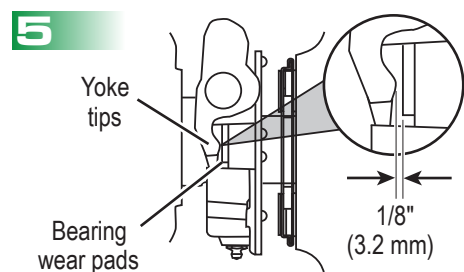
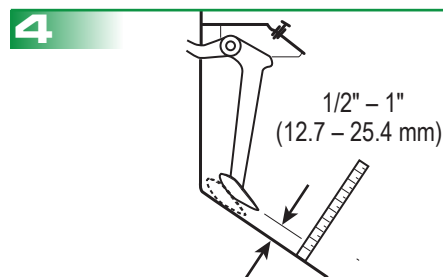
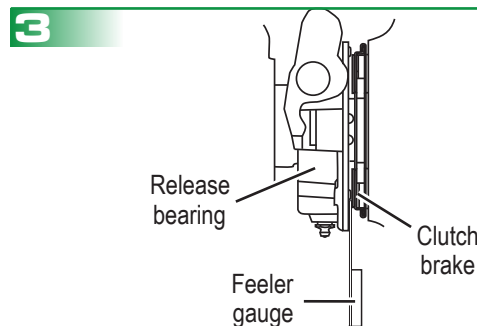
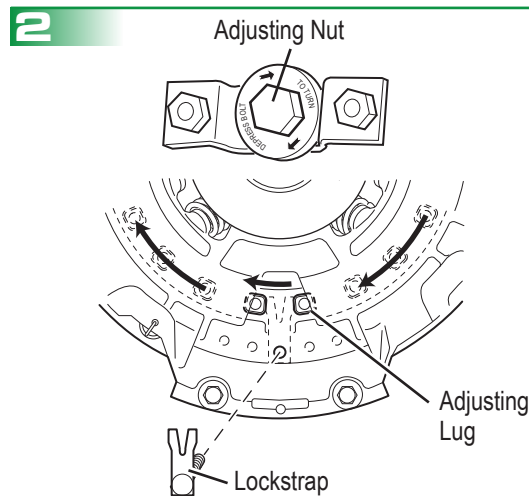
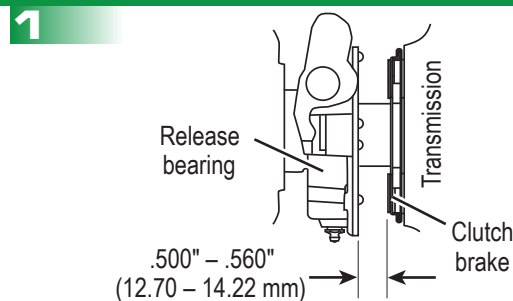
5. Check distance between yoke tips and bearing wear pads. This distance should be 1/8" (3.2 mm). **Note:** Do not change bearing position.
6. To change the yoke finger and bearing wear pads clearance, adjust the upper pedal stop to raise or lower the pedal in the cab.

LUBRICATE

Use a lithium complex base grease with a minimum of 325°F (163°C) operating range meeting N.L.G.I. grade 1 or 2 specs.

Apply ample grease that visibly exits the opening and contacts the transmission shaft. This will lube the clutch brake when pedal is pressed.

7. Apply grease to the input shaft and yoke.
8. Apply grease to the cross shaft bushings and linkage pivot points.
9. Grease release bearing



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