

NISSAN PATROL TWIN-DISC KITS

Serial #: _____

Thank you for purchasing our product. ACT has a long racing heritage supporting countless racers and series champions in many forms of racing. You can let our experience and expertise give you the same winning results. The ongoing challenge to win puts a constant demand for improved and higher-performance products we make. Constant challenges and continual improvement are driving forces for us. Since our products are racing-bred and performance-oriented, some tradeoffs may be expected. If, for any reason, we do not meet your challenges or expectations, let us know so we can continue to improve our products. Please consult our website or contact us directly with any questions, comments, or concerns.



PARTS / KIT COMPONENTS LIST

KIT	PRESSURE PLATE	FLYWHEEL	DISC	ALIGNMENT TOOL
T1S-N01	Heavy Duty	601250	Street / Street	AT01
T2S-N01	Xtreme	601250	Street / Street	AT01
T3S-N01	MAXX Xtreme	601250	Street / Street	AT01
T1R-N01	Heavy Duty	601250	Race / Race	AT01
T2R-N01	Xtreme	601250	Race / Race	AT01
T3R-N01	MAXX Xtreme	601250	Race / Race	AT01

Special Features & Benefits:

This kit is designed to replace the factory pressure plate, clutch disc and flywheel with the components listed below. With the exception of the factory pilot and release bearings, the ACT pressure plate, clutch discs and flywheel must be used together and will not work with any of the factory components.

For quicker acceleration and faster shifting, the weight of our flywheel and clutch has been reduced considerably. All ACT Twin-Disc Kits are certified to SFI specification 1.2 for improved safety.

WARNING: Failure to follow the vehicle manufacturer's installation procedures and specifications as the primary source of information and ACT's installation instructions as a secondary source may lead to serious injury, death, or clutch failure. Installation should only be performed by an experienced knowledgeable mechanic.

For more information, please visit

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BEFORE GETTING STARTED

1. Confirm the parts in your clutch kits are the parts you ordered and that no parts are missing from your kit. The component list is on the kit label.
2. Locate and review the General ACT Installation Instructions. These should be used by the mechanic and then saved for future reference. They are attached to this PDF after these instructions.
3. Refer to vehicle specific repair manual for a list of procedures, specifications and tools needed.

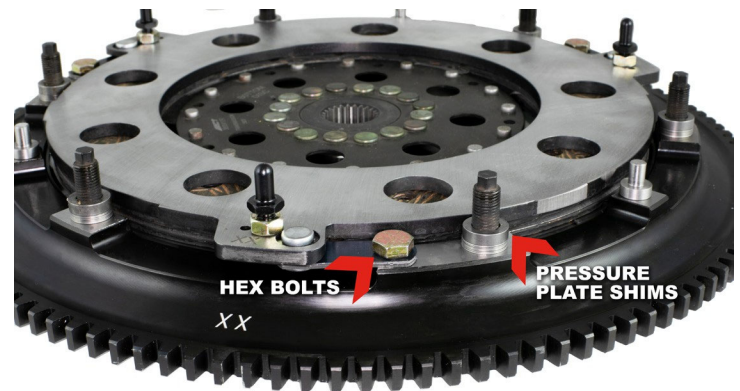
STEP BY STEP CLUTCH INSTRUCTIONS

1. After removing the parts from the packaging, inspect them closely to become familiar with them. The clutch assembly needs to be disassembled prior to installation by first loosening the six pressure plate nuts. The pressure plate shims should remain in place as you remove the pressure plate.
2. After the pressure plate is removed, unbolt the floater from the flywheel by removing the three hex bolts indicated (see image on the right).

NOTE: For your convenience when purchased as a complete kit, the floater lift is preset by ACT for new installation and separate components are marked for position. For more information, see the Adjustment section on page 4.

3. Once the parts are disassembled, wash the flywheel, floater and pressure plate friction surfaces with acetone or brake cleaner to remove all oils before installing. Oils can damage the disc and affect performance of the system. Also wash the flywheel and crankshaft mating surfaces.
4. Ensure that the crankshaft mounting surface is clean and free of burrs and debris. Install new pilot bushing into the crankshaft.

NOTE: DO NOT USE THE FACTORY CRANK TO FLYWHEEL SPACER!



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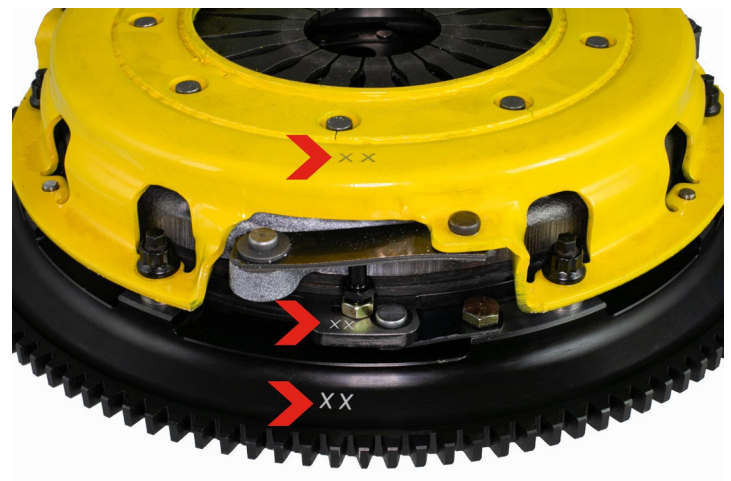
STEP BY STEP CLUTCH INSTRUCTIONS

5. Install flywheel with the proper flywheel bolts and a small amount of thread locking compound. Then, tighten bolts to vehicle manufacturer's specifications.
6. Notice that the two discs look the same. To determine which disc is the bottom disc, refer to the SFI card included with the kit. Place the bottom disc against the flywheel and then line up floater using the register marks that identify the position in relation to the flywheel. Then, bolt the floater plate to the flywheel using the 5/16" grade 8 fasteners that were removed earlier. Place a film of thread locking compound on the bolts and torque them to 32 Nm (24 ft. lbs.)
7. Make sure the expected number of shims are ready for installation under the pressure plate. If for some reason the shims have fallen off or do not match in all six locations, refer to the **Adjustments** section on page 4.

8. Make sure to locate the register marks that identify the position of the pressure plate in relation to the flywheel, if so equipped. This will ensure proper balance and factory floater adjustment (if purchased as a complete kit). Place top disc and pressure plate onto the flywheel assembly and loosely attach the pressure plate nuts. Use a splined alignment tool, such as the one included with your kit, or a spare input shaft to properly align the splined hubs of the disc while securing the pressure plate.

NOTE: A universal alignment tool cannot be used since these tools have no splines to properly line up both discs at the same time. Tighten the pressure plate nuts gradually and uniformly in a star pattern until the pressure plate is bottomed out against the pressure plate shims. Torque the pressure plate nuts to 68 Nm (50 ft. lbs.)

9. The adjustment feature of the floater plate is highly critical to the correct function of the clutch. If you wish to check the adjustment, see the Adjustments section (page 4) for more information.



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STEP BY STEP CLUTCH INSTRUCTIONS - ADJUSTMENTS

There are two basic adjustments for the ACT twin-disc clutch kit:

1. *Pressure plate shims* – These shims placed between the pressure plate and flywheel allow for additional wear of the disc surfaces for prolonged life since there is now twice as much material to use.
2. *Floater lift adjustment* – The amount of lift the floater has in relation to the pressure plate is adjusted by the three floater adjust studs. When properly adjusted the unique ACT floater design regulates floater lift at a prescribed rate which ensures air gap is achieved equally for both clutch discs.

Pressure plate shims: To determine the correct number of shims between the pressure plate and the flywheel, you will need to measure from the top of the pressure plate cover stamping to the top of the diaphragm fingers, as shown below. Lay a straight edge across the top of the cover, then using a ruler or caliper, measure the distance between the straight edge to the top of the diaphragm fingers. The new, installed position should be approximately 11.1mm (7/16") and adjustment is necessary if it measures less than 8mm (5/16"). Remove shims to lower the diaphragm fingers and adjust for wear. Add shims to adjust the diaphragm fingers higher, if the measurement is more than 14.3mm (9/16") Make sure that there is the same number of shims at each post.

Warning: If you change the amount of pressure plate shims or change components, you must read the floater lift adjustment. Otherwise, the clutch will not release properly, and you risk damage to the assembly or possibly your transmission.



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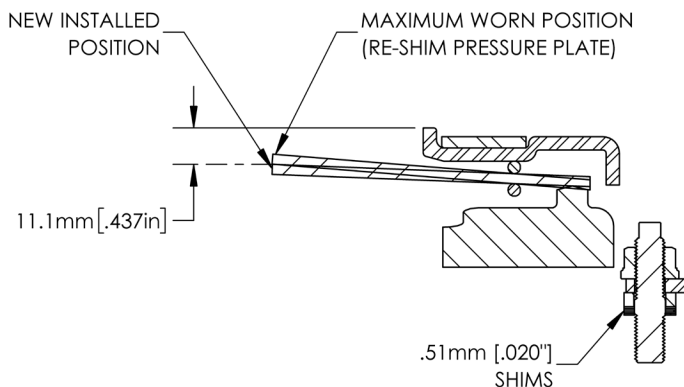
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STEP BY STEP CLUTCH INSTRUCTIONS

Floater lift adjustment: Once all the components are installed onto the engine and the pressure plate is shimmed and tightened down, you can adjust for floater lift. First loosen the jam nut located at the bottom of the floater adjustment stud. Then, screw the floater adjustment stud away from the pressure plate drive straps. Adjust as shown to the right.

Adjust the floater adjustment stud until the rounded end barely makes contact with the drive straps of the pressure plate (shown below). If necessary, use a piece of paper between the stud and the drive straps to help determine when it makes contact. For proper adjustment turn the stud an additional ____ flat (exactly 1/6th of a turn) to slightly preload the stud.

Once adjusted, tighten the jam nut to lock the floater adjustment stud, while being careful to keep it from moving. Use one wrench to hold the floater adjustment stud in position and a second wrench to tighten the jam nut as shown below. Repeat procedure for all three studs.



ADDITIONAL NOTES & WARNINGS

Attention: The following instructions are meant as a supplement to the factory clutch installation processes and are not intended as a complete installation instruction.

Gear noise: Due to the performance nature of the ACT flywheel and clutch, increased gear noise may occur.

Flywheel resurfacing: All ACT flywheels can be resurfaced by a qualified automotive machine shop, as needed. Be sure to retain original flywheel step, down .300" / 7.62mm.

Break-in: Normal break-in procedure is 200-300 miles / 320-480km of conservative street driving. For racing purposes, the break-in period for ACT puck-type race discs can be accelerated by performing several hard slips in high gear. Allow the clutch to cool for about 10 minutes between these slips to prevent overheating. The purpose is to lap the surfaces together under controlled load until there is complete surface contact and therefore, full torque capacity achieved. **Warning:** This is not the preferred break-in method. As with any accelerated technique, damage may result, unless the process is performed correctly with a skilled operator.