Coan ENGINEERING
TRANSMISSIONS & CONVERTERS

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Coan “Spragless” 3-Speed Instructions
COA-131150 - COA-131160

Congratulations on your purchase of a Coan “Spragless” 3-Speed, the “Ultimate Automatic” for class racing. This transmission is designed to provide unmatched performance and dependability if certain guidelines are followed. The unique circuitry of this transmission’s valve body incorporates a spragless 2-3-gear change as well as a “clean” neutral position for safe vehicle shut down. This transmission requires the use of Precision Performance Products # 458 shifter.

**** COMMITMENT * PERFORMANCE * RELIABILITY * “A WINNING COMBINATION”***

Many times transmission failure is the result of installation errors, torque converter problems, or contaminants in the cooling system. We have provided a basic set of instructions to insure proper installation of your transmission and converter. Please read these instructions completely before starting the installation. If you have any questions, please feel free to contact us.

INSTALLATION:

1. FLUID: Coan Engineering requires the use of AMSOIL Universal Synthetic ATF in this transmission. This fluid will provide the best performance while maintaining proper lubrication in the transmission. AMSOIL is available from Coan Engineering in quart, case, and 2.5 gallon containers. Pour one quart of fluid in the torque converter prior to installing it on the transmission. This will assure that the seal and bushing in the front pump have adequate lubrication for start-up. If installing a converter which had previously been used, drain it as best possible and pour new fluid in it before placing it on the transmission.

2. Make sure to use the *correct* dipstick and tube for your transmission application. Maintaining proper fluid level is critical to the operation of your transmission. Failure to maintain proper fluid level can lead to early if not immediate failure of your transmission. Coan Engineering offers a complete line of dipsticks with locking tabs and rubber bushing type seals to prevent leaks around tube.

3. Inspect flexplate for cracks around all mounting holes, as well as around ring-gear. Make sure converter and flexplate bolt hole size and bolt circle pattern match before installation. Confirm spline count on input shaft and converter match. Coan 3-Speed transmissions are available to accommodate Powerglide and General Motors TH350/400 spline converters.

4. Make sure block dowel pins are long enough to fully engage in transmission case dowel pin holes to insure proper alignment. This is especially important with cars using a mid plate. Longer dowel pins for most applications are available from Coan Engineering.

5. **Do not** force bell housing onto the engine by tightening the bellhousing bolts! The transmission should be installed flush to the engine block before tightening bell housing bolts. Install **ALL SIX** available bellhousing bolts

6. When bolting converter to flexplate, push converter back into transmission and measure gap between flexplate and converter. The converter will need a *minimum* clearance of 1/8", and *maximum* clearance of 3/16". The converter will need to pull out of the transmission to the flexplate. If you have less than 1/8" clearance, you will damage the transmission. Before bolting converter to flexplate, confirm converter pilot is engaged into crankshaft pilot. Always use grade # 8 fasteners to attach converter to flexplate.

7. Installation of an auxiliary transmission oil cooler is recommended for cars subjected to multiple runs and/or short turnaround times between runs. If installing a cooler, the bottom port on the passenger side (front) is the outlet and the top is the inlet. Cooler lines should be a -6 AN or equivalent to provide adequate flow. If you are not using a cooler, the two ports must be “looped”, using -6 AN or equivalent. If your transmission was ordered specifically for use without an auxiliary cooler, the cooler ports have been internally by-passed and are supplied with port plugs installed. The port thread in the case is ¼ NPT. Use caution when installing case fittings, over tightening can result in cracking the transmission case. If you are replacing an existing transmission and using the same oil cooler, the cooler must be flushed thoroughly. There are products on the market like “Trans Flush” which is an aerosol solvent designed specifically for this purpose. Failure to flush coolers and lines will cause faulty operation and premature transmission failure.

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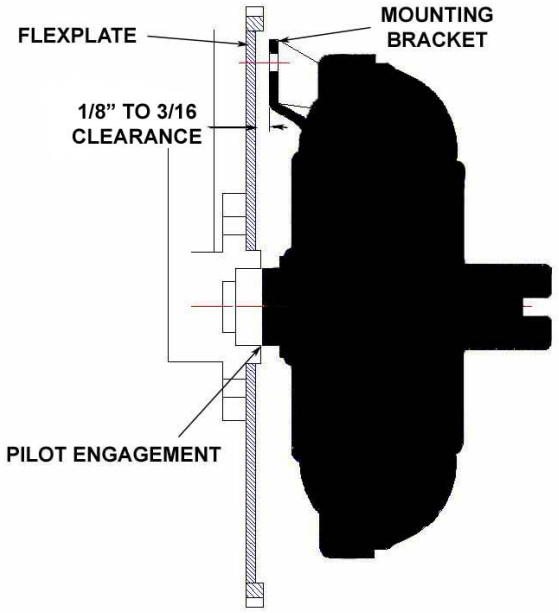

8. Inspect drive shaft yoke for excessive wear or burrs. Check drive shaft for run out, missing weights and cracks in welds. Inspect u-joints. Apply some transmission fluid to yoke before installing drive shaft in tailhousing of transmission. It is important that rear seal and bushing are lubricated to prevent damage on start-up. Your transmission is equipped with a roller bearing in the tailhousing. Use of this roller bearing requires an aftermarket billet yoke. Stock or forged yokes are not hard enough and will fail when used with a bearing. The yoke must also be the correct OD for use with a roller bearing. The OD should measure 1.498"/1.499".

9. Connect the transbrake solenoid. Coan solenoids use red and black wires. Make sure the black (-) wire goes to a good clean chassis ground, and the red (+) wire goes through a 15 amp momentary switch to a 12 volt source.

10. Consult the instructions supplied with your Precision Performance Products shifter for proper neutral safety switch wiring. It is crucial that you use the proper shift lever and pan bracket for this shifter. Initial shifter cable adjustment should be done with the shifter and transmission in the 2nd gear position. Once the 2nd gear position is adjusted perfectly, verify adjustment in each of the other positions except for park. The cable end should slide freely into the shifter bracket in each position. If it does not, verify that your cable geometry is correct. DO NOT OPERATE THE TRANSMISSION UNTIL ADJUSTMENT IS CORRECT.

11. Upon completing installation of the transmission and converter pour an additional 6 quarts (Deep Aluminum Pan) 5 quarts (Shallow Steel Pan) of AMSOIL synthetic fluid into the transmission. Start the engine with the shifter in the "Clean N" position, then pull the transmission into 1st, 2nd, 3rd, and R/N positions. With the shifter in the R/N position depress the transbrake to engage reverse. Once you have completed this sequence all air should be successfully bled from the system and fluid level may be verified in the "Clean N" position with the engine running. Add fluid until the transmission reaches the full marking on the dipstick.

12. Transmission "Line Pressure" should be monitored on you data acquisition system. Remove the passenger side rear 1/8" NPT pressure port plug from the case and connect a 0-500 psi pressure transducer. Coan Engineering has set this pressure based upon the horsepower level of your engine. Maintaining proper transmission oil pressure is equally important to maintaining proper engine oil pressure. High "Wheel Standing" cars need to pay close attention to transmission pressure at the launch. Pressure spikes can indicate rear fluid "stacking" and possible cavitations. Contact Coan Engineering if you notice changes or erratic behavior of this pressure.

OPERATION:

1. REVERSE: This transmission features a Reverse Lock-Out Safety feature which requires the shifter to be in the R/N position and the trans-brake be engaged to activate reverse.

2. LOW RPM DRIVING: When driving through the pits it is recommended to use only high gear. In the event you choose to use a lower gear DO NOT make a 2-3-gear change at low engine speeds. The 2-3-gear change is designed to be made only at Wide Open Throttle. Although this will not damage the transmission at low RPM, the shift quality will seem problematic.

3. PARK: If your transmission is equipped with the optional "Park" feature it should only be used to keep the car from rolling on grades at the racetrack. NEVER trailer the car in "Park" or strap the car down against "Park". This can cause damage to the transmission.

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BURNOUTS:

- FULL-BODIED CARS W/ LINE-LOC: Start with the transmission in second gear, once tires begin spinning shift into high gear. Avoid allowing the tires to “chirp” when driving out of the water box.
- DRAGSTERS: Start with the transmission in high gear. Bring engine up to 3000 RPM against brakes before starting burnout.

If you have any questions regarding the proper installation and/or operation of a Coan Racing product, please call (765) 456-3957. You may also fax us at (765) 456-3960, or e-mail at coan@coanracing.com.

Warranty

Coan Engineering offers a limited warranty covering all new products for ninety days and all repair service for thirty days from the original date of purchase to be free from flaws in material and craftsmanship. The warranty is non-transferable. Under no circumstances will Coan Engineering extend its warranty to products, new or repaired, which have been abused, misused, or incorrectly installed. Disassembly of any product by means other than a Coan Engineering technician will void any potential warranty. All warranty claims must be accompanied by the original invoice and are subject to the approval of Coan Engineering.

The above stated warranty **does not include** any shipping charges or labor charges for installation or removal of any Coan Racing product.

Liability

In no manner, neither written nor implied, does Coan Engineering accept liability for consequential or incidental damages to person or property resulting from the use or misuse of its products. Product failure occurring within the stipulations of the warranty policy will be dealt with explicitly under those particular guidelines.