# sonnax®

TASC™ FORCE APPROVED

# THE SURE CURE® SATURN TAAT

## Transmission Reconditioning Kit


### Full Compatibility

- Full compatibility with TAAT Type II valve bodies.
  See important note on page 2 concerning Type I valve bodies

### Valve Body Parts

- Pressure Regulator Valve Sleeve **(95200-05K)**
- Pressure Regulator Valve **(95200-06)**
- Pressure Regulator Cushion Spring **(95200-01)**
- Boost Valve & Sleeve **(95200-03K)** for Type II valve bodies only

### Required Tools

- Sonnax tool kit **95200-TL** is required to ream the Pressure Regulator Valve Bore.


**NOTE** Verify application since the Boost Valve and Sleeve Assembly (**95200-03K**) included in this kit (**SC-TAAT**) is for Type II valve bodies only and cannot be installed in or used to update the earlier Type I design. All other components in this kit can be installed in either Type I or II units.

**Part No.**
**95200-TL**
Required for use with this Sure Cure® Kit.



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## TORQUE SPECIFICATIONS

| | |
|---|---|
| Input & output shaft lock nut | 110 lb ft |
| Case half bolts short | 18 lb ft |
| Case half bolts long | 21 lb ft |
| Valve body to case | 97 lb in |
| Oil pump bolts | 106 lb in |
| Oil pan bolts | 89 lb in |

## CLEARANCE AND ENDPLAY

Differential Unit Endplay
Use thickest possible snap ring that provides smallest possible endplay.

OEM Differential Endplay Rings

| | | |
|---|---|---|
| 21002329 | .051" | (1.3mm) |
| 21002324 | .055" | (1.4mm) |
| 21002325 | .059" | (1.4mm) |
| 21002326 | .063" | (1.6mm) |
| 21002327 | .067" | (1.7mm) |
| 21002328 | .071" | (1.8mm) |
| 21002330 | .075" | (1.9mm) |
| 21002331 | .079" | (2.0mm) |

Pump Clearance

| | |
|---|---|
| Pump pocket | .0005" - .0016" |
| Outer gear to housing | .0025" - .0055" |

## CLUTCH CLEARANCE

| | |
|---|---|
| 1st Clutch<br>.038" - .055" | Selective snap ring |
| 2nd Clutch<br>.060" - .086" | Selective snap ring |
| 3rd Clutch<br>.046" - .061" | Selective snap ring |
| 4th Clutch<br>.036" - .046" | Selective snap ring |

OEM Selective Snap Rings

| | | |
|---|---|---|
| 21002290 | .063" | (1.60mm) |
| 21002291 | .070" | (1.78mm) |
| 21002292 | .077" | (1.96mm) |
| 21002293 | .084" | (2.14mm) |
| 21002294 | .091" | (2.32mm) |
| 21002295 | .098" | (2.50mm) |
| 21002296 | .105" | (2.68mm) |
| 21002297 | .113" | (2.86mm) |

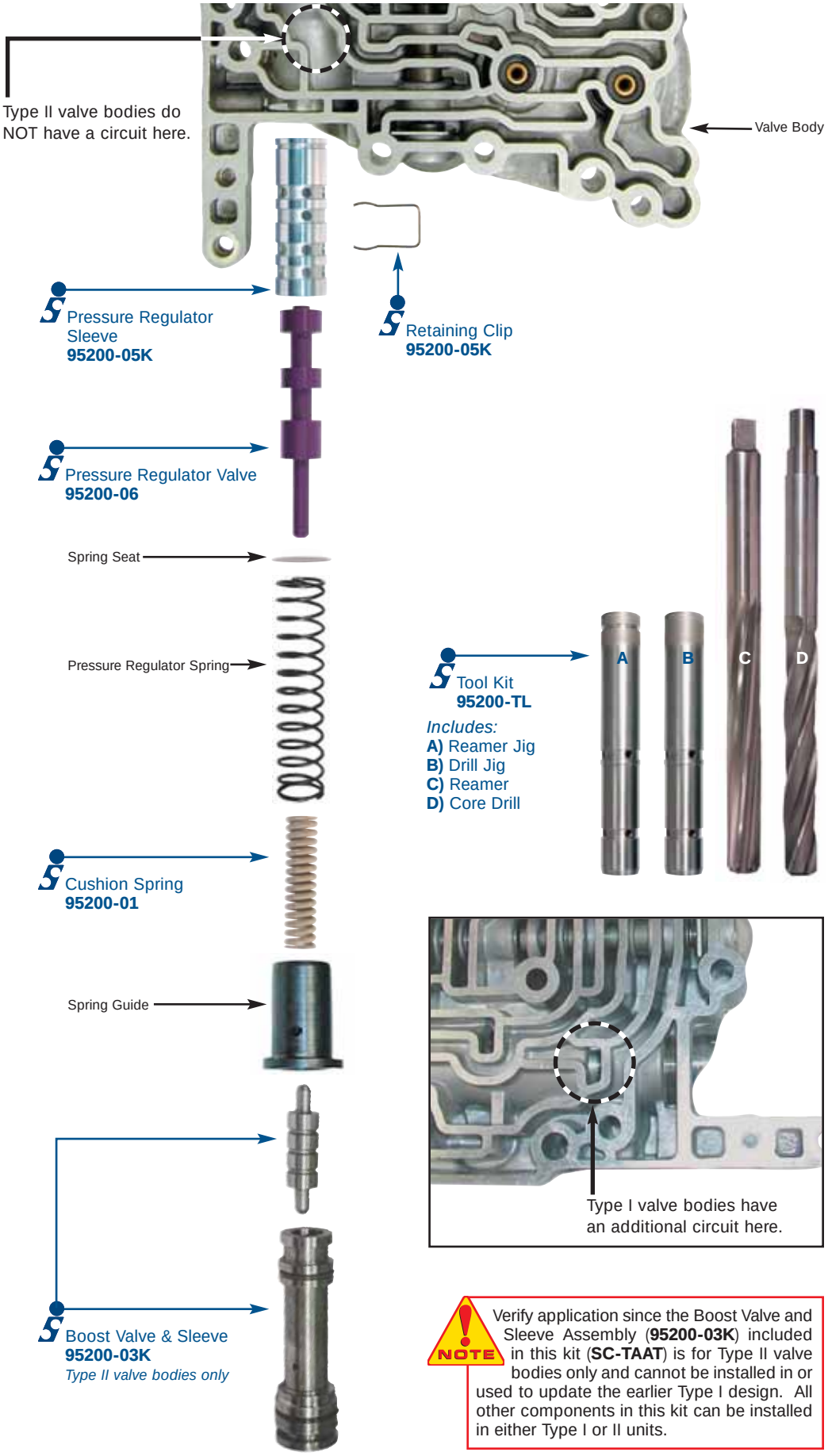
## TECH TIPS

Various intermittent electrical codes are often caused by poor connection at the transmission harness connector or the wires nearest the connector. Replacement harness connector repair kit, OEM part #12116563 is available.

Before reinstalling the circuit board over the actuators, push down slightly on the solenoid pin contact tabs to improve tension on solenoid pins.

Closely inspect the small bushings deep inside the input and output shafts. Make sure bushings are securely in position, and are not worn where the tubes fit.

The 1st clutch return spring is different from 2nd, 3rd, 4th spring. Mixing locations causes shift complaints and falling out of gear.




NOTE

Verify application since the Boost Valve and Sleeve Assembly (**95200-03K**) included in this kit (**SC-TAAT**) is for Type II valve bodies only and cannot be installed in or used to update the earlier Type I design. All other components in this kit can be installed in either Type I or II units.



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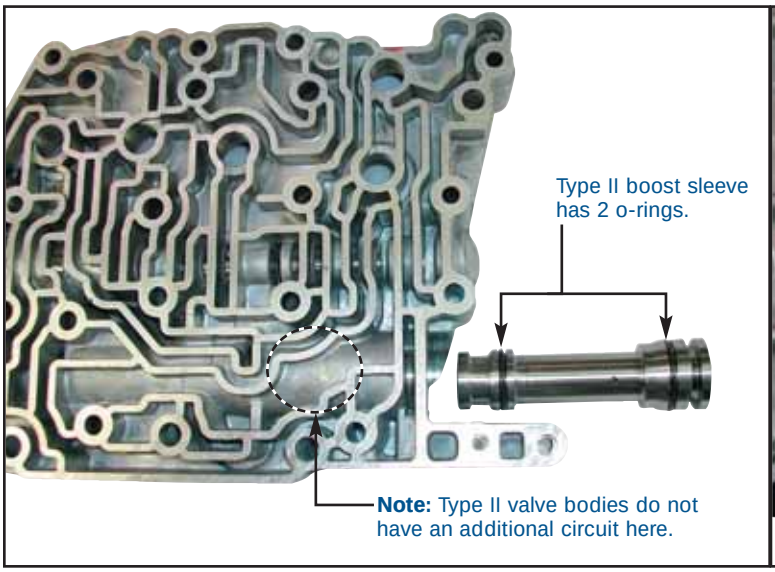
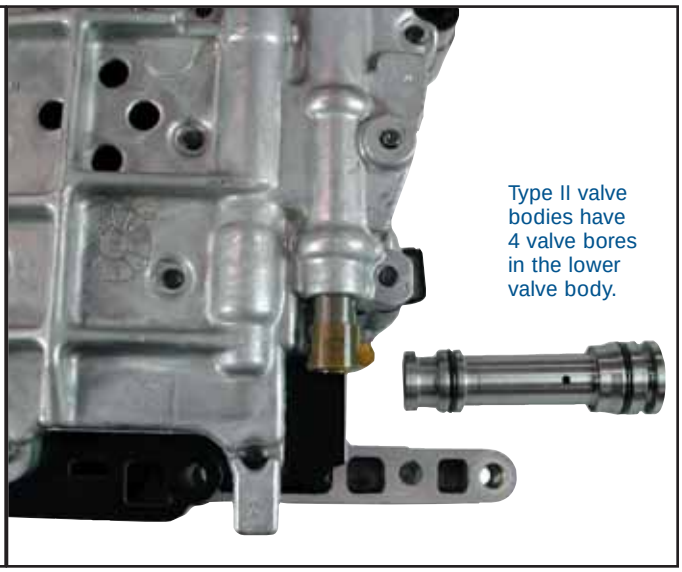
## Saturn TAAT Type II Valve Body

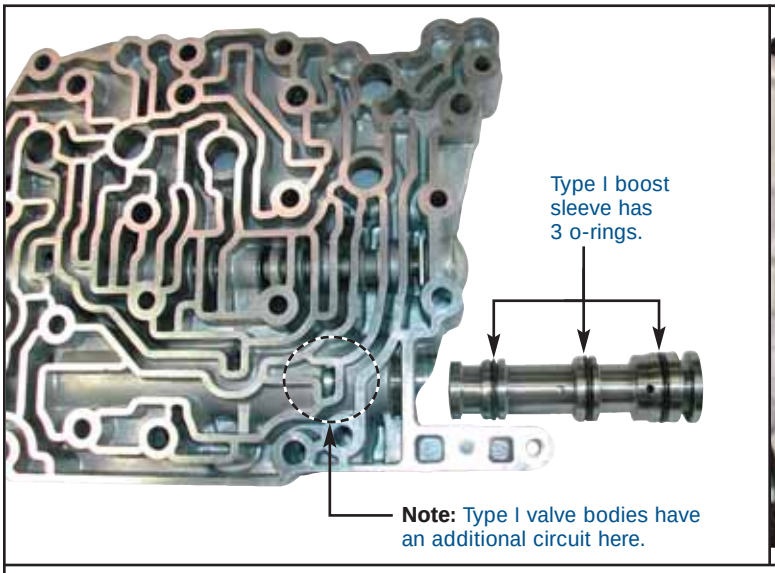
Sonnax boost valve assembly fits in Type II valve bodies only.

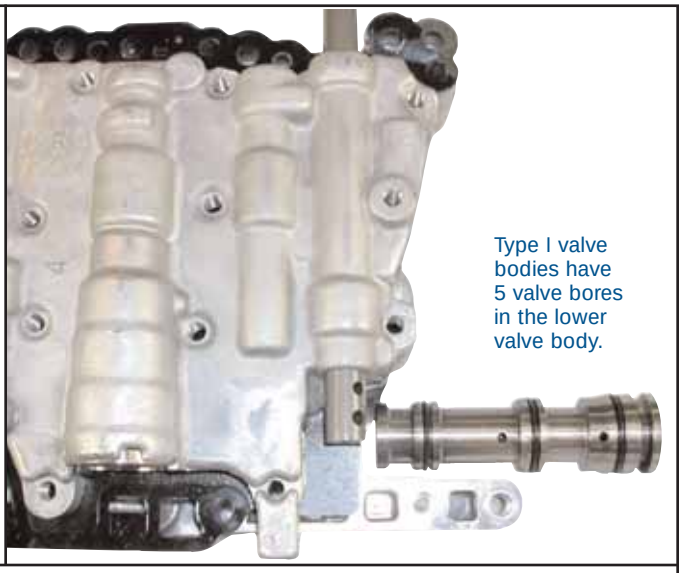



## Saturn TAAT Type I Valve Body

Sonnax boost valve assembly does not work in Type I valve bodies.




**NOTE: Do NOT install boost valve supplied with this kit if your OEM boost valve and valve body look like this.**

## Disassembly Instructions:

Remove all components from the pressure regulator bore:

- Type II valve bodies: Save the large OEM pressure regulator spring, spring seat and spring guide, and boost sleeve retainer.
- Type I valve bodies: Save the large OEM pressure regulator spring, spring seat, spring guide and the original boost valve, boost sleeve and sleeve retainer.

## Drilling Instructions:

1. Clean the valve body in a solvent tank.
2. Clamp the valve body to bench horizontally, with circuits up. Do not clamp directly over the bore to be drilled and reamed.
3. Insert the drill jig into the bore, knurled end out, until it bottoms. The drill jig has NO identification groove on the knurled end and has "Saturn PR Valve Drill Jig" printed on it.
4. Fill bore and coat core drill with cutting fluid (Tap Magic™, etc.).
5. Insert core drill into the drill jig carefully, until it contacts the pressure regulator bore. Drill the bore carefully, at about 250 rpm, until the drill bottoms in the pressure regulator bore.
6. Using an air gun, blow out as many chips as possible before removing the drill.
7. Remove the drill and blow out any remaining chips. Clean again in the solvent tank.



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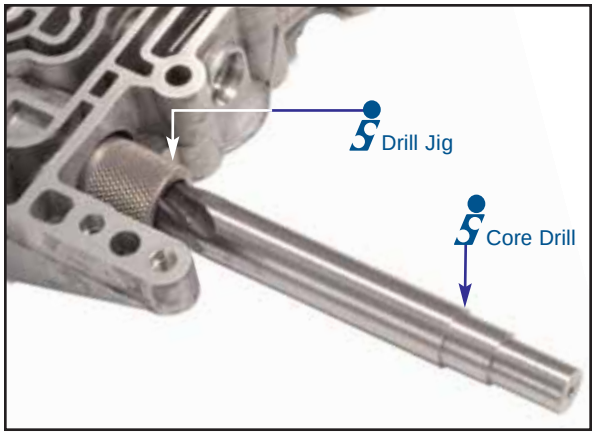
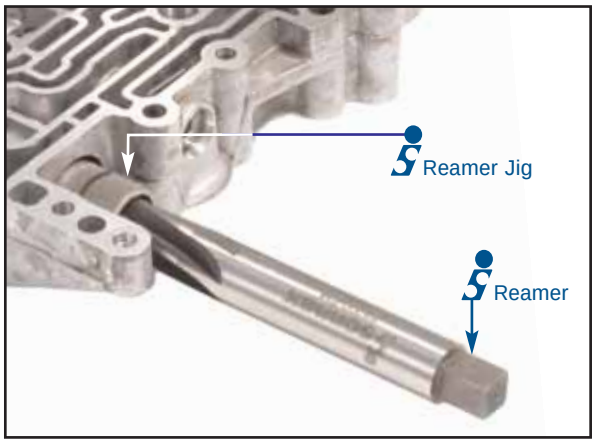
## Reaming Instructions:

1. Reclamp the valve body to bench horizontally, with circuits up.
2. Insert the reamer jig into the bore, knurled end out, until it bottoms. The reamer jig has one identification groove on the knurled end and has the text “Saturn PR Reamer Jig” on it.
3. Fill bore and coat reamer with cutting fluid (Tap Magic™, etc.).
4. Insert the reamer into the bore carefully, until it contacts the pressure regulator bore. Using a speed handle, turn the reamer clockwise at about 1 to 1½ revolutions per second in a continuous motion. Continue until the reamer bottoms in the pressure regulator bore.

   **IMPORTANT NOTE:** Do not push or apply inward force on the reamer. It must be cut on its own speed. Forcing the reamer results in an undersized bore ID, putting a squeeze on the installed sleeve and causing the valve to stick.
5. Using an air gun, blow out as many chips as possible before removing the reamer.
6. Remove the reamer by rotating clockwise while pulling outward. Blow out any remaining chips and clean the valve body again in the solvent tank.



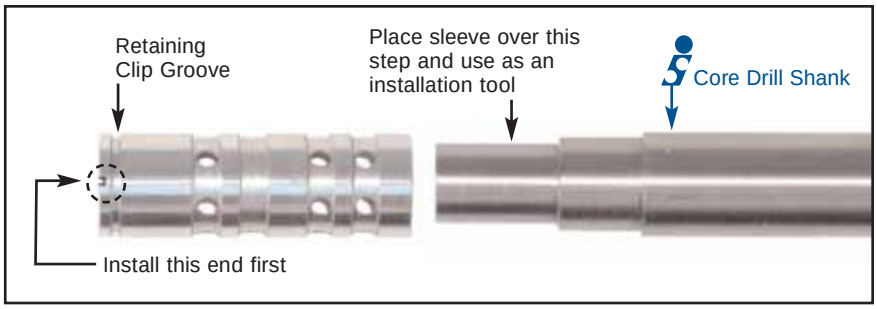




## Reaming Cautions:

- Never turn the reamer backward.
- Pushing on the reamer will result in poor surface finish, inadequate and sporadic material removal, and material being left behind as the reamer exits a bore.
- Blow any chips free from the reamer after each use.
- Never use a crescent wrench or ratchet to turn the reamer.

## Installation Instructions:

1. Lubricate the bore and all parts with ATF prior to assembly.
2. The pressure regulator valve sleeve should go into the valve body with the end notches and narrow clip groove first (inboard). The sleeve will fit over the shank end of the core drill, which can be used as an installation tool for the sleeve, as shown at right.

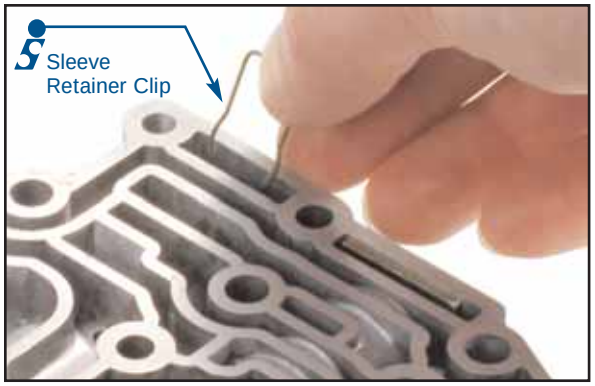



3. To help ensure that the sleeve will be maintained in its proper position during the valve body service life, the following procedure is strongly recommended:

   Insert the sleeve up to the point where the retainer groove is about to start into the last circuit. Place a drop of sleeve retainer on the inboard two sleeve diameters. Allow it to run around and toward the casting.

   Twist the sleeve to the base of the bore. It is important to follow the manufacturer’s recommendations to allow time for full curing before continuing with the installation.

   Insert sleeve with Loctite™. If retainer will not fit into the groove, remove quickly before Loctite™ sets up and remove approximately .030" of material from the inboard end of the sleeve. Reinstall with new Loctite™. If the sleeve cannot be pulled out without force, leave in with just Loctite™, but allow full cure time.




4. Slide the OEM spring seat (washer), then the new cushion spring over the PR valve stem and insert the pressure regulator valve into the installed sleeve with the stem, washer and spring facing out.
5. Place the OEM spring guide into one end of the large OEM PR spring and install it into the bore with the spring guide facing out. The inboard end of the spring should contact the spring seat.
6. **Type II valve bodies:** Place new o-rings onto the boost valve sleeve, and install the boost valve, and sleeve assembly and secure with the OEM retainer.

   **Type I valve bodies:** Reinstall the OEM boost valve assembly and retainer.



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